Georg K.

U.S. Department
of Transportation
**Federal Railroad
Administration**

Certain Railroad Employee Fatalities Investigated by the Federal Railroad Administration Calendar Year 1984

Office of Safety

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INTRODUCTION

This report presents the Federal Railroad Administrations's findings in its investigation of 40 railroad employee fatalities suffered during 1984. Not included are the employee fatalities that occurred as a result of train derailments, collisions, or rail-highway crossing accidents; these are reported in the 1984 Summary of Accidents Investigated by the Federal Railroad Administration.

The purpose of this report is to direct public attention to hazards that exist in the day-to-day operation of railroads, to guide the overall Federal program to promote the safety of railroad employees, and to supply rail management, rail labor, and all other interested parties with information and analysis for use in training and other action to prevent similar accidents.

J. W. Walsh
Associate Administrator
for Safety

CAUSE DIGEST

CAUSE DIGEST

SUMMARY OF ACCIDENTS INVESTIGATED INVOLVING ONE OR MORE FATALITIES

RAILROAD	ACCIDENTS
ARR	2
BN	2
BO	2
CNW	1
CO	1
CR	8
DQE	1
DRGW	1
ICG	1
MBRR	1
MILW	1
MP	3
NJT	1
NW	3
SBD	3
SOU	2
SP	3
SSW	2
TCG	1
TOE	1

Accident Investigation Reports

REPORT: 1

RAILROAD: Missouri Pacific Railroad Company

LOCATION: McKneely, Louisiana

DATE: January 4, 1984, 5:50 p.m.

CAUSE: Failure to secure the tie butt pusher feet on a Kershaw dual tie saw machine before the machine was moved. A contributing factor was the failure of a foreman to secure a safe position on the tie saw machine while it was in motion.

EMPLOYEE:

Occupation	Track foreman
Age	42 years
Length of Service	11 years
Last Rules Training	November 21, 1983
Last Safety Training	No record
Last Physical Examination	January 23, 1978

Circumstances Prior to the Accident

A maintenance-of-way crew, consisting of three track laborers, three machine operators, and a foreman, was renewing bridge ties on a bridge over the Morganza Floodway at milepost 121.7, in McKneely, LA.

The foreman, a machine operator, and three track laborers were riding on a Kershaw dual tie saw machine traveling towards the McKneely spur track (milepost 120.9) to clear equipment from the main track, as a train was approaching. The machine operator was at the controls; the three track laborers were standing on the derail assembly on the rear of the machine; the foreman who was sitting on the right side of the battery box on the front was not visible to the machine operator.

The Accident

En route to the spur track, the tie saw had to traverse a levee road crossing (16 feet wide) at milepost 121.7. The machine was traveling at about 15 mph when the butt pusher feet, on the rear of the tie saw, hung down and contacted the crossing planks (or boards) of the levee crossing. The machine began to lurch, and the foreman fell to the ground. Some of his clothing remained caught on the tie saw, and the foreman was dragged under the rear wheels of the machine, where he sustained fatal injuries.

Post-accident Investigation

Inspection of the tie saw machine revealed that as the machine was moving, the tie butt pusher feet were not in the full, upright position with the safety pins in place. When the tie butt pusher feet are in position with the safety pins in place, the feet can clear the top of the rail by 2 3/4 inches.

As the machine lurched after striking the road-crossing planks and the foreman fell, part of his clothing caused him to be dragged under the rear wheels. The foreman who suffered scalp lacerations, a skull fracture, and other injuries was taken to Pointe Coupee General Hospital, New Roads, LA, where he was pronounced dead on arrival.

Applicable Rules

Missouri Pacific Railroad Company - Rules and Regulations for the Maintenance of Way and Structures

57. Employees shall not place themselves in dangerous positions, and man in charge must prevent their men from doing so.

(Uniform Code of Safety Rules)

L. Constant presence of mind to insure safety to themselves and others is the primary duty of all employees and they must exercise care to avoid injury to themselves and others. They must observe the condition of equipment and the tools which they are using in performing their duties. . . .

REPORT: 2

RAILROAD: Southern Pacific Transportation Company

LOCATION: Gray Rocks, California

DATE: January 11, 1984, 1:10 p.m.

CAUSE: The track welder's helper fell off a flatcar while attempting to clear a moving Burro Crane.

A contributing factor was the uncontrolled movement of the crane due to the failure of a brake beam on the Burro Crane.

EMPLOYEE: Occupation . . . . . Track Welder's Helper

Age . . . . . 30 years

Length of Service . . . . . 4 1/2 years

Last Rules Training . . . . . No record

Last Safety Training . . . . . November 7, 1983

Circumstances Prior to the Accident

On a single main track between the switches of the siding at Gray Rocks, CA, a work-train was being used to pick up scrap rail. From east to west, the train consisted of a caboose, a locomotive, a high-side gondola, a flatcar carrying a Model 40M-burro crane, and three high-side gondola cars. The flatcar was equipped with rails mounted on the floor upon which the crane was operated. Each rail at each end of the car had a metal stop to keep the crane from running off the ends of the car. The crane was picking up scrap rail on either side of the main track and loading it onto the gondola cars. The train consist was moving west at 12 mph from one work location to another, about 7,000 feet.

The crane was placed at the east end of the flatcar with the boom extended to the west, and the brakes were fully applied.

The welder's helper working as a track laborer and a track laborer were standing in front of the crane on the flatcar and were holding the boom. The crane operator was in the control compartment of the crane; a conductor and maintenance supervisor were in the caboose; an engineer and a head brakeman were in the cab of the locomotive; and a flagman was sitting on the south side of the lead gondola.

The Accident

When the work train passed the spot where the scrap rail was to be picked up, the supervisor radioed the engineer to stop the train and back up. As the train was stopping, the crane lurched westward on the flatcar. The welder's helper and track laborer ran to the west on the flatcar (ahead of the crane) to avoid being struck. The crane operator called a warning to the men when the crane began moving. He did not see either of them again until the train stopped because he was trying to stop the movement of the crane. The laborer leaped from the flatcar to the end of the gondola car, and saw the helper fall between the cars, but did not see what caused the fall. The train stopped 18 feet beyond the location where the helper fell. The welder's helper suffered fatal injuries when the south wheels on the west end of the flatcar went over him. There were no other witnesses to the accident.

Post-accident Investigation

An inspection of the crane revealed a broken brake beam. That brake beam had been recently welded because a crack had appeared, and the brake occurred at the edge of the weld. On the designed braking system of the Burro crane, if either brake beam fails the crane is without brakes.

A crane tie-down cable was lying near the west end of the flatcar, but was not used because the crane was in use and the operator was in the control compartment.

The crane operator stated that he had checked the brake system on the crane prior to its initial move, and the system was functioning properly.

Applicable Rules

None.

REPORT: 3

RAILROAD: Tuscon, Cornelia and Gila Bend Railroad Company (TCG)

LOCATION: Ajo, Arizona

DATE: January 22, 1984, 2:40 p.m

CAUSE: The employee fell from a train.

EMPLOYEE:

Occupation	Engineer-switchman
Age	67 years
Length of Service	34 years
Last Rules Training	August 1983
Last Safety Training	No record
Last Physical Examination	No record

Circumstances Prior to the Accident

The accident occurred on a spur track adjacent to a loading platform of a Phelps Dodge Plant. When a train transporting empty cars stopped at a grade crossing about one-half mile from the loading platform, the engineer-switchman and an assistant foreman at the plant discussed the work and agreed that the engineer would place 10 empty cars at the platform. The locomotive would also be secured there and left overnight. Then the assistant foreman would meet the engineer-switchman on the platform and take him to the office where he would go off duty. (The engineer-switchman had been on duty 6 hours and 40 minutes after completing the required off-duty period.)

The TCG uses remote-controlled radio equipment to permit one-man train operations.

The locomotive is equipped with remote-control battery-powered radio equipment and the engineer-switchman wears a backpack transmitter and a push-button control unit which he uses to operate the train. This remote-control backpack radio has a built-in, fail-safe switch that is activated when the unit is tipped beyond a 45-degree angle. The unit is designed to have up to a 3-second-delay emergency application that will cause the remote-control unit on the locomotive to stop the train by setting off an emergency application of the air brakes.

When spotting cars at the loading platform, it is common practice for the engineer to either ride on the first car past the platform or to stop the train, dismount, take a position on the loading platform to see if the track is clear, and spot the cars from the platform.

The Accident

As last observed by the assistant foreman, the engineer-switchman was riding in the open area of the corner of the leading hopper car.

When the assistant foreman returned to the loading platform, he saw that the train had stopped, but the engineer-switchman was not in sight. The assistant foreman found the body of the engineer-switchman lying over the west rail under the trailing wheel of the second car, 18 feet south of the north end of the platform. There were no witnesses to the accident.

Post-accident Investigation

As there were no witnesses to the accident, it was not determined if the engineer-switchman had stopped his train to dismount or had attempted to jump from the moving train to the loading platform.

The investigation revealed that the train had been stopped automatically by an emergency application of the air brakes that were activated by the radio control receiver on the locomotive.

The remote-control unit carried by the engineer-switchman was tested after the accident, and the fail-safe and emergency-stop switches were working, even though the unit was damaged in the accident.

Applicable Rules

Code of Safe Practice for Train Haulage -- Phelps Dodge Corporation

b. Dismounting moving trains.

. . . . . .

i. Dismount a moving train only at prepared landing areas. If no prepared area is available, stop the train before dismounting. If a prepared landing area needs to be cleared or maintained, notify the Shift Foreman.

. . . . . .

8. Hazard: Falling when mounting or dismounting a moving train.

Precautions:

a. Before attempting to get on or off of a moving train, slow it sufficiently so that the move can be made safely.

REPORT: 4

RAILROAD: Chicago, Milwaukee, St. Paul and Pacific Railroad

LOCATION: Davenport, Iowa

DATE: January 25, 1984, 11:05 a.m.

CAUSE: The diesel house manager failed to stand clear of moving equipment on the track.

EMPLOYEE:

Occupation	Diesel house manager
Age	56 years
Length of Service	39 years
Last Rules Training	No record
Last Safety Training	Monthly meetings
Last Physical Examination	May 30, 1979

Circumstances Prior to the Accident

A diesel house manager was on his way to assist mechanical department employees in a mechanical inspection of inbound freight train Extra 164 North. The train was arriving at Nahant Yard on the north main track. Nahant Yard is a flat switching yard with eight tracks connected at each end. On the north, two tracks, designated the north and south lead, each connect four of the yard tracks.

Six employees including the diesel house manager were walking from the yard office northward between the north main and north lead tracks to the inspection area. The diesel house manager was walking along the western edge of the ties of the north lead track, following the other five employees.

A three-man switch crew was performing its assigned duties in Nahant Yard, using switcher Locomotive MILW 436. The front of the locomotive was facing north; the engineer's controls were on the right in the control compartment at the rear. The yardmaster had radioed the switch crew to cross over from the north lead to the south lead track, and their locomotive was moving northward on the north lead with its warning bell ringing. As the locomotive approached the crossover switch, the crew foreman and his helper descended the left rear corner steps; the engineer was at the controls preparing to stop the locomotive.

The Accident

Witnesses heard the locomotive bell and saw the accident. The left-front corner of the locomotive struck the diesel house

manager in the back. He fell in front of Locomotive 436 and was crushed under the pilot. The locomotive engineer placed the air brakes in emergency and stopped the locomotive when he saw an employee's stop signal in front of the locomotive.

The body of the diesel house manager suffering fatal injuries was found under the locomotive behind the pilot and ahead of the No. 1 wheels. He was taken by ambulance to Mercy Hospital, Davenport, IA, and pronounced dead at 1:05 p.m.

Post-accident Investigation

The investigation revealed no unusual conditions that could have contributed to the accident.

The eyewitnesses stated that the diesel house manager was walking too close to the track and apparently did not hear the ringing bell on the locomotive approaching behind him.

Applicable Rules

> Chicago, Milwaukee, St. Paul and Pacific Railroad Company -- Safety Rules Governing Employee of the Car Department, Locomotive Department, Material Division
>
> . . . . . .
>
> F. Employees must expect the movement of trains, engines, cars or other movable equipment at any time, on any track, in either direction . . . .

REPORT: 5

RAILROAD: Consolidated Rail Corporation

LOCATION: East Syracuse, New York

DATE: February 9, 1984, 1:45 p.m.

CAUSE: The employee failed to observe a close side clearance and confine his movements to the available space.

EMPLOYEE:

Occupation	Laborer
Age	54 years
Length of Service	30 years
Last Rules Training	Not required
Last Safety Training	Last observed February 3, 1984
Last Physical Examination	Not required

Circumstances Prior to the Accident

At about 1:30 p.m. a hostler and the subject laborer were instructed by the fuel plant foreman at Conrail's DeWitt Fuel Station, Syrcuse, NY, to move four locomotives off the fuel pad on Track. No. 9. The locomotive consist on Track No. 9, east to west, included locomotives CR 2365, CR 7547, CR 1970, and CR 6487. The hostler was operating from the north side of CR 6547. The laborer gave the hostler a backup signal and boarded the left front step of the locomotive CR 2365.

As the fuel plant foreman walked across Track No. 10, he observed all four locomotives moving east off the fuel pad. Using hand signals and his voice, he stopped the move and told the laborer to stay where he was, on the steps of CR 2365, just along the side of the sand tower platform. Then he explained to the hostler that the two east locomotives were to be cut off and placed on the east end of Track No. 7, and the two west locomotives were to remain, to be moved later from the west end of the fuel pad.

The foreman walked west along the north side of CR 7547. On reaching the front of CR 7547, he gave the hostler a signal for slack to make the cut between CR 7457 and CR 1970. The hostler later stated that he had moved the consist west for approximately 5 feet while the foreman was attempting to uncouple the locomotives.

The Accident

When the hostler turned after moving 5 feet, he looked east and saw that the laborer had fallen to the ground. The hostler stopped the movement, told the foreman, and they both went to the laborer's aid.

At Conrail's DeWitt Fuel Station on the north side of Track No. 9, there is a close clearance to the sand tower platform.

The laborer who had sustained severe, crushing injuries to his lower body, was attended on the scene by a locomotive engineer who is also an emergency medical technician.

When an ambulance removed the laborer, he was in cardiac arrest. He was transported to St. Joseph's Hospital, where he was treated and pronounced dead at about 4 p.m.

Post-accident Investigation

There were no eyewitnesses to the accident, so the final actions of the laborer could not be determined.

Immediately preceding the accident, the laborer was stationed at a spot with a very close clearance -- the distance between the sand tower platform and the locomotive is 8 1/2 inches. The laborer was observed on the ground after he apparently had fallen from his place between the locomotive (CR 2365) and the sand tower platform. He apparently had been wedged between the left front (north side, east end) of the locomotive and the sand tower platform.

Applicable Rules

Conrail Safety Rules for Maintenance of Equipment Employees

4243. While getting on or off, working inside or under locomotive, observe overhead and side clearance, and confine movements to space available to prevent striking head or other part of body.

REPORT: 6

RAILROAD: Alaska Railroad

LOCATION: Anchorage, Alaska

DATE: February 24, 1984, 9:30 a.m.

CAUSE: The employee handled an inadequately secured load with a forklift that was not equipped with a required overhead protective guard.

Contributing factors were the uneven surface over which the load was being handled, the icy surfaces of the lumber packages, the height to which the load was raised, and the tilt to the rear of the forklift mast.

EMPLOYEE:

Occupation	Truck driver
Age	41 years
Length of Service	14 years
Last Rules Training	Not required
Last Safety Training	February 1984
Last Physical Examination	Not required

Circumstances Prior to the Accident

A truck driver reported for work at the railroad freight house at 8 a.m. on the day of the accident. Using a Caterpillar Towmotor forklift with a nominal capacity of 4,000 pounds, he was attempting to transfer packaged lumber from a loading dock (adjacent to the freight house) to a flatbed highway trailer. Although other properly equipped vehicles were available, he was working with a forklift from which the overhead protective guard had been removed. Each of the lumber packages being handled measured: 39 inches high, 52 inches wide, and 96 inches long,and was secured with three 1-inch steel straps. Each package weighed in excess of 2,300 pounds. Subfreezing temperatures (25°F) had caused frost to form on the lumber. The area in which the forklift was operating was paved; however, the surface was uneven because of accumulated snow and ice.

The Accident

Using the forklift, the employee moved a package of lumber from the loading dock to the ground, then picked up a second package and placed it on top of the first. He raised both packages approximately 5 feet to clear the bed of the trailer. This placed the upper package above the top of the fork lift mast. When the mast was tilted to the rear to place the load on the

trailer, the upper package slid backward and fell, fatally crushing the truck driver against the steering wheel.

Post-accident Investigation

The employee, operating a forklift with a nominal capacity of 4,000 pounds, was transversing an uneven, icy surface with two packages of lumber weighing more than 4,600 pounds. The surface of each package, which was loaded one on top of the other, was icy because of exposure to sub-freezing weather. When the forklift mast was tilted to the rear to facilitate loading the packages on the highway trailer, the top package slid backwards and, in the absence of the required protective overhead guard, crushed the employee against the steering wheel. There were other forklifts available for use with the required protective guard, although the employee chose not to use them.

Applicable Rules

Alaska Railroad Manual of Safety Rules and Regulations for General Guidance and Protection of Railroad Personnel

7. Foremen and supervisors shall read, understand and follow these rules.

1406. Forklift and hand truck operators must be sure that freight or material being moved is adequately secured to prevent falling.

1408. Forks on forklifts must not be elevated to a height inconsistent with safe movement of load.

1409. Extreme care must be used in tipping of mast while under load.

1411. Except in emergencies, forklifts not equipped with overhead protective guard will not be used.

REPORT: 7

RAILROAD: Missouri Pacific Railroad Company

LOCATION: Judd, Texas

DATE: February 28, 1984, 2 p.m.

CAUSE: The failure of both a track foreman and a tamper operator to operate their vehicles at appropriate speeds consistent with maintenance-of-way rule requirements regarding obstructed views and limited sight distance.

Contributing factors were the carrier's rules that permitted a dispatcher to issue "track and time" to two operators within the same limits without requiring each to be notified of the other's presence, and the failure of the track foreman to contact the tamper operator via radio.

EMPLOYEE:

Occupation	Track foreman
Age	29 years
Length of Service	8 years
Last Rules Training	March 1982
Last Safety Training	No record
Last Physical Examination	August 2, 1977

Circumstances Prior to the Accident

At approximately 12:58 p.m., the foreman of a tamper crew near Judd, TX, telephoned a train dispatcher and received "track and time limits" from 12:58 p.m., until 4:01 p.m., between West Strawn, milepost 327.5, and West Brazos, milepost 301.9.

The tamper crew was then working between mileposts 306 and 308. At about 1:40 p.m., the foreman told the tamper operator to move the tamper machine west on the main track to milepost 320 pole 7 near Strawn, for track cross-level work. The operator received no other instructions from the foreman and proceeded down the main track in the tamper.

A track crew consisting of three track laborers and a foreman was performing track maintenance duties between Gordon, TX, and Strawn, TX. At approximately 1:40 p.m., the foreman telephoned the train dispatcher from Gordon and requested "track and time limits" to work between Strawn and Brazos. The dispatcher issued the foreman "track and time limits" from 1:42 p.m., until 4:01 p.m., between East Strawn, milepost 326.1, and West Brazos,

milepost 301.9. The dispatcher also notified the foreman that Tamper ATP-23 was within the same limits and told to watch the tamper operator.

The track foreman and three laborers headed east towards Brozos, with the foreman operating a Fairmont Model MT-14-L-2 motor car that was towing a push car. The tamper mahine, a Roadmaster Plasser Production Tamper, No. ATP-23, Model URMS, was operated by one employee. Both the motor car and the tamper were equipped with functioning two-way radios.

The Accident

As the motor car rounded a curve at about 20 mph (milepost 313.9), the motor car crew observed Tamper ATP-23 approaching from the east. The track foreman immediately applied the motor car brakes and yelled to the track laborers to jump. Two laborers were able to jump before impact. But when the two vehicles crashed, the track foreman and one laborer were thrown from the motor car; the foreman was killed instantly, and the laborer was seriously injured.

As Tamper ATP-23 rounded the curve at Judd, at about 25 mph, the operator saw the motor car coming from the west and immediately applied the tamper brakes, but the two machines collided. After the impact as soon as the tamper stopped, the operator jumped from the tamper and ran back to the inert body of the track foreman. Realizing the foreman was seriously injured or dead, he returned to the tamper and called for assistance on the tamper radio.

When an ambulance and other assistance arrived, the foreman was pronounced dead at the scene, and the three track laborers were taken by ambulance to Ranger, TX, and later to All Saints Episcopal Hospital in Ft. Worth; one had received serious injuries and two suffered minor injuries.

Post-accident Investigation

In the accident area, from the east, there is a 1-degree 58-minute curve to the right from 600 feet to the point of accident and 600 feet beyond. Also, there is a 0.3-percent ascending grade to the point of accident, and a 1.2-percent ascending grade beyond. Boxcars stored on a siding parallel to the single main track restricted sight distance in the curve to 351 feet.

The sight distance for both motor car crew and tamper operator was obstructed by the boxcars stored in the siding.

The speed of both the motorcar and the tamper was in excess of that speed which would permit stopping within one-half the range of vision.

Although the track foreman knew a tamper was in the area, the tamper operator was unaware the motorcar was working in his "track and time limits."

Both vehicles were equipped with functioning two-way radios that could have been used by either operater to determine the location of the other.

Applicable Rules

Missouri Pacific Railroad Company - Rules and Regulations for the Maintenance-of-Way Structures

Rule 143 - Speed -

The speed of motor cars under the most favorable conditions must not exceed the speed given in the following table for the kind of cars and class of service indicated.

Light Inspection Cars	30 MPH
Gang Cars without trailers	25 MPH
Gang Cars with trailers	20 MPH
Work equipment with HY-rail wheels	20 MPH

Speed of cars must be such that the car can be stopped in less than one-half the distance track is seen to be clear.

Rule 144 - Protection against trains and other cars -

(a) Care and Caution - In the operation of cars, foremen and others must move at all times with care and caution necessary for safety, and protecting when necessary, using prescribed signals. Care must be exercised to avoid collision with trains or other cars. Alertness and full use of eyes and ears are important.

REPORT: 8

RAILROAD: DeQueen and Eastern Railroad Company

LOCATION: Dierks, Arkansas

DATE: March 2, 1984, 1 p.m.

CAUSE: An uncontrolled rolling car. Pursuit of the car by the subject brakeman was a contributing factor.

EMPLOYEE:

Occupation	Brakeman
Age	27 years
Length of Service	2 years 5 months
Last Rules Training	October 10, 1983
Last Safety Training	No record
Last Physical Examination	September 17, 1981

Circumstances Prior to the Accident

A derailed empty flatcar on a Weyerhaeuser hardwood log track in Dierks, AR, was rerailed by an industry machine operator who used a large forklift stacker machine. After rerailing the car, the Weyerhaeuser operator asked for and received permission from a carman to move the car to allow a roadgrader to clear the log track of some debris, responsible for the derailment.

The carman walked away from the flatcar to the main track to accompany the conductor and the brakeman (all members of a road switching crew) to protect three road crossings over which the train was to operate.

As the train left the track, the subject brakeman got off and lined the main track switch for a movement on the main track. After the train started westward on the main track, the conductor noticed that the rerailed car in the log track was rolling out of control and moving eastward toward the train on the main track. The conductor radioed the subject brakeman to watch out for the car that was rolling away from the machine operator. (The machine operator had been pushing the car with the forklift.) The subject brakeman acknowledged the radio transmission and tried to stop the runaway car by placing a piece of wood under the leading wheels, which were closest to him.

The Accident

Unsuccessful in stopping the car, the brakeman ran toward the trailing end of the car where the handbrake was located. At about the same time as the brakeman reached the handbrake, the

rolling car struck the train moving on the main track in the opposite direction. Then the rolling car reversed its movement and struck the brakeman, causing him to fall between the rails. The car rolled eastward another 54 feet, dragging the brakeman between the rails.

The body of the brakeman was found under the east truck assembly; he was pronounced dead at the scene as a result of traumatic injuries.

Post-accident Investigation

The accident occurred on a stub end industrial track, designated the "hardwood log track," of the Weyerhauser Corporation. The east end of the track connects to the main track, and the track grade is 0.89-percent descending eastward.

The rolling car was moving on a descending grade toward the train operating on the main track. The subject brakeman, after being notified of the emergency, attempted to stop the car using a piece of wood as a wheel chock. However, the wood chock did not stop the car, and the brakeman ran to the opposite end of the car to apply the handbrake. Apparently the brakeman reached the handbrake about the same time as the car struck the train on the main track and the collision reversed the movement of the runaway car. The brakeman was knocked between the rails and dragged by the freight car trucks.

Applicable Rules

DeQueen and Eastern Railroad Company Safety Rules

ON OR ABOUT TRACKS

14. Employees on or about tracks must always be alert to keep out of danger, exercising care to avoid injury to themselves and others. Nothing in these rules is to be construed as relieving any employee from performing his full duty in this respect.

LEAVING PORTION OF TRAINS

101 (c)...

. . . . . .

On heavy grades, when stopping on the main track or a siding, when cutting engine off a train or cars at stations to do work, or at stops of unusual length, with engine

detached a sufficient number of hand brakes must be set to hold the train or cars.

REPORT: 9

RAILROAD: Meridian and Bigbee Railroad Company

LOCATION: Cromwell, Alabama

DATE: March 7, 1984, 8:15 a.m.

CAUSE: The employee's failure to see that all the switches connected with a movement were properly lined.

EMPLOYEE:

Occupation	Brakeman
Age	40 years
Length of Service	13 years 4 months
Last Rules Training	November 1982
Last Safety Training	No record
Last Physical Examination	No record

Circumstances Prior to the Accident

Cromwell, AL, is an interchange point with the Burlington Northern Railroad (BN). BN tracks Nos. 1 and No. 2, which parallel the BN Main Track and extend in a north-south direction, are used as interchange tracks. From the south, there is a south crossover from Track No. 2 to No. 1 and a north crossover from Track No. 1 to Track No. 2. The accident occurred at the north end of the north crossover.

On the day of the accident, a road crew was switching cars at the interchange. Three cars were uncoupled and pulled south on Track No. 2 and movement was lined through the south crossover to Track No. 1 to pick up additional cars. The brakeman lined the north switch of the south crossover and failed to notice the position of the south switch to the north crossover. He radioed the engineer to come forward about eight-car lengths to a coupling. As the movement proceeded through the south crossover to Track No. 1, the brakeman mounted the north end, west side of the lead car, and proceeded northward on Track No. 1 through the north crossover, a distance of about 80 feet. The lead car struck the side of the remaining cars standing on Track No. 2, causing a raking side collision and a derailment.

The Accident

When the brakeman told the engineer to shove ahead eight-car lengths, he failed to position the south switch of the north crossover for proper movement, and he did not notice that the movement had entered the north crossover. As a consequence, the

brakeman riding the lead car of the movement was crushed during the side collision.

His body was found on the ground between track Nos. 1 and 2. He died as a result of severe injuries inflicted by the side collision.

Post-accident Investigation

An investigation of the area including track, terrain, and equipment disclosed no unusual condition which could have caused or contributed to the accident. The brakeman's portable radio was tested and found functioning. There were no witnesses to the accident. The investigation did not disclose the person who left the south switch at the north crossover in a reverse position.

Applicable Rules

Illinois Central Gulf Railroad Operating Rules

104(c) - A track must not be fouled until switches connected with the movement are properly lined. . . .

REPORT: 10

RAILROAD: Norfolk and Western Railway Company

LOCATION: Roanoke, Virginia

DATE: March 31, 1984, 12:35 a.m.

CAUSE: A brakeman failed to note a close clearance between the cars on an adjacent track and the locomotive on which he was riding.

EMPLOYEE:

Occupation	Brakeman
Age	26 years
Length of Service	3 years 9 months
Last Rules Training	January 13, 1984
Last Safety Training	No record
Last Physical Examination	No record

Circumstances Prior to the Accident

The eastbound classification yard in the Roanoke Terminal extends east to west. The grade is 0.58-percent descending eastward; yard limits are established and the yard is well illuminated.

The brakeman belonged to a yard crew consisting of a conductor, two brakemen, and an engineer. On duty for 1 hour 35 minutes after completing the required off-duty period, the crew was assigned to switch and block cars from the retarder yard into one train. The switching locomotives consisted of one diesel electric locomotive and one slug locomotive operating in multiple unit control.

When the crew began working in the retarder yard, the subject brakeman was in the front brakeman position at the east end of the yard. The conductor and the field brakeman were at the west end of the yard.

The front brakeman was instructed to cut yard track Nos. 12 and 13 in order to clear the east end of the ladder track and then go to Yard Track No. 14. After Yard Track No. 13 was pulled east,the front brakeman signaled the engineer to stop. He then signaled the engineer to proceed west. The draft of cars moved one-half carlength before the front brakeman signaled the engineer to stop. The front brakeman then cut off the locomotives in Yard Track No. 13 and signaled the engineer to proceed east to Yard Track No. 13 east switch. After stopping, the front brakeman went to the south side of the ladder track.

He returned to the north side on which the engineer was working and signaled him to proceed west into Yard Track No. 14.

The engineer was aware of a clearance problem for the cars on Yard Track No. 13; but, since the front brakeman was in his full view on the north side, the engineer believed he would protect the movement.

The Accident

As the locomotive neared the standing cars on Yard Track No. 13, the engineer saw the front brakeman trying to climb the steps on the locomotive, and made a full application of the independent brake. Although, the engineer estimated his speed at 3-5 mph, the locomotive traveled approximately 24 feet before stopping.

The front brakeman was struck by the east standing car on Yard Track No. 13 and was pinned between the car and the slug locomotive. A short time later, he was pronounced dead on the scene.

Post-accident Investigation

The accident occurred at the fouling point between yard track Nos. 13 and 14 at a point 40 feet west of Yard Track 14 east switch.

Carrier operating rules require employees to inform themselves of close clearances and to avoid unintentionally fouling other tracks. The front brakeman apparently miscalculated the distance needed to clear the adjacent track.

Applicable Rules

Norfolk and Western Railroad Company
Operating Rules

M. Employees must exercise care to avoid injury to themselves and others.

Employees must inform themselves as to locations of structures or obstructions where clearances are close and must take necessary precautions to avoid injury at such locations . . . .

103. When pushing cars at any location, crew members must take action to prevent damage to avoid unintentionally fouling other tracks. . . .

103 (H). When it can be avoided, cars and engines must not be left standing so as to foul adjacent tracks. . . .

REPORT: 11

RAILROAD: St. Louis Southwestern Railway Company

LOCATION: Hutchinson, Kansas

DATE: April 4, 1984, 3:20 p.m.

CAUSE: A machine operator attempted to make repairs on raised equipment that was not secured.

A contributing factor was the defective condition of the plow safety locks.

EMPLOYEE:

Occupation	Machine operator
Age	21 years
Length of Service	2 years 10 months
Last Rules Training	No record
Last Safety Training	March 28, 1984
Last Physical Examination	No record

Circumstances Prior to the Accident

The accident occurred 5 miles west of Hutchinson, KA, on the St. Louis Southwestern Railway Company's Kansas City Division, Fourth Subdivision. In the accident area, the north track is the main track and the south track is called Whiteside siding. Parallel and tangent, the two tracks run geographically east and west at an almost level grade. The accident occurred on the siding at milepost 250, pole 14, 3,432 feet east of the west switch. The machine operator on a ballast regulator was working ahead of a production tamper; both were moving towards the west siding switch.

The Kershaw ballast regulator, model 26-2-1 manufactured in 1980, is powered by a diesel engine and hydrostatic transmission. Hydraulic pumps actuate: (1) the reversible "vee"-type plow mounted on the front of the machine; (2) the ballast wings mounted on the side of ballast regulator; and (3) the track broom mounted on the rear. An air compressor supplies the air brake system, the air horn, and the air-operated safety locks on the front plow.

On the day of the accident, a surfacing gang was told to spot surface the 13,713-foot long Whiteside siding. The crew consisted of a foreman, a machine operator to run the ballast regulator, a machine operator to run the production tamper, a laborer-driver, and a laborer.

With the ballast regulator operating ahead of the tamper, work began at the east end of the siding and proceeded westward toward the end of the siding. The crew stopped for lunch at 1:30 p.m. and returned to work at approximately 2:10 p.m. Between 2:10 p.m. and approximately 3 p.m., the foreman and the laborer-driver performed minor track repairs in the Hutchinson yards. When they returned to the gang, they found both machines operating in the siding. There the laborer-driver returned to his work next to the tamper, and the foreman remained in the truck.

The Accident

Between 3 p.m. and 3:20 p.m., the laborer-driver started walking towards the ballast regulator. When he reached it, he found the machine operator lying under the front of the ballast regulator, with the plow resting on the operator's shoulder and neck. Examinations by the foreman and emergency response personnel who were summoned failed to detect any signs of life in the machine operator, and he was pronounced dead on the scene at approximately 4:20 p.m.

Post-accident Investigation

At the time of the accident, the machine operator was working under the front plow of the ballast regulator trying to repair a leak in the hydraulic fitting.

The plow was in the raised position, but the automatic safety locks that should have been holding the plow in place were not engaged. When the machine operator was tightening the leaking hydraulic fitting, the fitting ruptured. As a consequence, the loss of hydraulic fluid led to a loss of the hydraulic pressure which was holding the 2,026-lb plow in the raised position. The plow dropped, striking the machine operator across the neck and shoulders, crushing his trachea.

Safety locks for the plow on the ballast regulator are air-operated by lever from the control compartment of the machine. Post-accident inspection of the ballast regulator revealed that the safety locks on the plow would not engage and function as intended.

Applicable Rules

ST. LOUIS SOUTHWESTERN RAILWAY COMPANY
RULES AND REGULATIONS
FOR THE
MAINTENANCE-OF-WAY
AND STRUCTURES

M 863. Operators of track machines, roadway machines, or equipment are charged

with the responsibility of knowing that their machines or equipment are in safe operative condition before starting, and must assure themselves that proper protection is being afforded their operations.

M 864. Operators must keep machines and equipment clean and free of all hazards and must assist in every way possible in maintaining them in safe, operative condition. Prompt report must be made to division engineer's office when equipment fails to function properly.

Southern Pacific Transportation Company/
St. Louis Southwestern Railway Company
SAFETY RULES
GOVERNING EMPLOYEES
OF THE
MAINTENANCE-OF-WAY
AND STRUCTURES DEPARTMENT

5028. Hands, feet, and all other parts of the body must be kept in a position where they cannot be struck by, caught under, or between materials, tools, and equipment.

. . . . . .

5068. Employees must not go under any raised equipment unless it is properly secured.

REPORT: 12

RAILROAD: Southern Railway Company

LOCATION: Rockmart, Georgia

DATE: May 1, 1984, 10:35 a.m.

CAUSE: A chainsaw operator was crushed when he fell with the span of a wood trestle deck as he was cutting it loose. Failure to use available "life lines" was a contributing factor.

EMPLOYEE:	Occupation.	Apprentice
	Age	28 years
	Length of Service	3 years 11 months
	Last Rules Training	No record
	Last Safety Training.	February 27, 1984
	Last Physical Examination	June 17, 1983

Circumstances Prior to the Accident

At the accident site, milepost 101.6, 0.2 miles north of Rockmart, the apprentice was working on a single track ballast deck trestle with a walkway. Although the height of the trestle varied, it was approximately 24 feet above ground at the point of accident.

A force of eighteen men, including two supervisors, three contractors,and two bridge gangs, were converting the wooden trestle into a steel ballast deck trestle. Well holes were dug in the ballast down to the wooden deck, and temporary crib walls were put in place to hold back the ballast. Holes were then cut through these well holes. The steel piles were cut off, and steel caps were affixed to them so that the piles formed the bents for the new steel trestle.

The following procedure was used to remove the wooden span. A cable was run from a winch on a bulldozer (on the ground on the east side of the trestle), around the bent and secured to the bent. An auxiliary cable was wrapped around the deck, in case the wooden span did not fall when the bent was pulled out. The wood piles were then cut through approximately 90 percent, and the wood stringers and wood ballast guards were cut. These cuts were made at the new steel cap. Each piece was cut twice and a block, approximately 8-inches long, was removed so that the portion to be removed would not bind on or disturb the remaining portion. After all the cuts were made, the bulldozer pulled out

the wood pile bents, so that the wood deck would fall. The new steel deck could then be placed on the steel caps.

The distances from the new steel bents to the old timber pile bents differed at each span, creating dissimilar conditions at each span, even though the same type of work was being performed.

At the spot where the accident occurred, only one timber pile bent was involved, and it was approximately 10 feet north of the new steel bent.

The cables had been affixed to the bent and the timber deck. The saw cuts on the timber piles had been made, and the men on the ground were told to stay clear so they would not be struck when the blocks that were going to be cut from the stringers fell to the ground.

Two employees with chainsaws (one, the victim) started cutting the wooden ballast guards and cutting the blocks out of the stringers. One employee was on the east side of the bridge working west; the apprentice was on the west side working east. To accomplish the task, they had to stand in the well--with one foot on the portion of the deck that was being removed and the other on the portion that was to remain. One cut on each stringer was made over the new steel cap, and the second cut on each stringer was made north of the steel cap, so that when the deck finally fell, it would not hang on the cap.

The Accident

All the stringers had been cut through except the one under the west rail. The worker cutting from the east moved into position and started cutting this stringer. As a safety precaution, another man was holding his trouser belt.

When the employee cut through the stringer under the west rail his saw became pressure-bound. The apprentice took a position opposite this employee, at the same stringer, in order to cut the stringer in another place to relieve the first employee's saw. Because of his position in order to make the cut, the victim had most of his weight on his left foot, which was on that portion of deck being removed. The man standing on the track started moving so that he could also hold the victim's belt; but before he could grab the belt the victim sawed into the bottom of the stringer, and the stringer snapped. The south end of the span dropped immediately, and the apprentice fell with it. During the collapse, the deck and stringers broke loose from the cap of the timber bent, crushing the apprentice to death.

Post-accident Investigation

"Life lines," a safety belt and line that can prevent the user from falling to the ground from a high place, were not in use on this day, although at least one employee considered the position

of the men using the chainsaws to be perilous enough to hold one of them by the belt during the cutting sequence.

Interviews revealed that everyone was directing his efforts so that the structure would fall free and clear, as this is the easiest and quickest way to accomplish the job. It is also the most dangerous way because employees can lose control of the falling deck.

Applicable Rules

The carrier publishes no safety rules pertaining to this type of work.

REPORT: 13

RAILROAD: Alaska Railroad

LOCATION: Seward, Alaska

DATE: May 1, 1984, 7:30 p.m.

CAUSE: The employee failed to stand clear of the moving equipment.

Contributing to the accident was the lack of forward vision by a machine operator. Also the employee wore a rain jacket with a hood covering his head and the continuous operation of the diesel engine at high speed made it impossible for him to hear the equipment approaching from the rear.

EMPLOYEE:		
	Occupation.	Freight handler-checker
	Age	29 years
	Length of Service	3 years
	Last Rules Training	Not required
	Last Safety Training.	No record
	Last Physical Examination	May 17, 1981

Circumstances Prior to the Accident

The freight handler-checker was working as the groundman in a loading crew at the Seward railyards. His duties included directing a machine operator whose forward vision was obstructed by his modified forklift machine. The crew went on duty at 8 a.m., took a service break from about 10 a.m. to 1:30 p.m., and had a second break for dinner from about 5:30 p.m. to 6:30 p.m. The accident occurred in daylight at approximately 7:30 p.m., in a light rain with a temperature of 55° F. The freight handler-checker was wearing a dark-colored rain jacket with a hood raised over his head. The machine was operating on a gravel surface, almost black in color.

The forklift operator could not see the groundman as the machine began to move forward, and he was unaware of the accident until he saw the body lying on the ground next to the machine. There were no witnesses to the accident.

The Accident

The two-man crew, an operator and a freight handler-checker, was loading highway trailers onto TOFC flatcars using a large off-track machine to raise and position the trailers. As the machine moved forward to pick up a trailer for loading, the right front wheel struck the groundman, and ran over him.

Post-accident Investigation

The machine operator was using a "LeTRO-PORTER," a large articulated machine similar to a modified forklift. Powered by a diesel engine which runs at a constant, high speed, the machine has four rubber tire wheels approximately 7 feet in diameter. The operator is stationed in a control compartment at the approximate center of the machine. His eye level is about 15 feet above the ground; and forward vision from the operator's station is obstructed by the mast and other parts of the lifting equipment. The machine did not have a motion-warning device.

The combination of dark-colored rainwear, the dark background of the gravel surface, and the poor lighting caused by the overcast sky and the rain further impaired the already limited visibility from the operator's compartment.

Applicable Rules

The carrier has no rules applicable to the operation of off-track equipment in TOFC loading service.

REPORT: 14

RAILROAD: Chicago and North Western Transportation Company

LOCATION: Franklin Grove, Illinois

DATE: May 17, 1984, 10:40 a.m.

CAUSE: The signalman came in contact with high-voltage lines. Contributing factor was the failure of the signalman to wear properly insulated clothing or to disconnect the high-voltage lines while working on a signal pole line.

EMPLOYEE:

Occupation	Signalman
Age	35 years
Length of Service	12 years
Last Rules Training	February 8, 1983
Last Safety Training	February 8, 1984
Last Physical Examination	No record

Circumstances Prior to the Accident

At milepost 87 on the Sterling Subdivision, east of Franklin Grove, a railroad signal pole line runs parallel to a double main track, 25 feet south of the westward main track. The poles supporting the signal wires have two crossarms mounted near the top, and the six signal wires (24.5 feet above ground) were not attached or secured on the top crossarm. Four of the six wires carried high voltage of 440 VAC and 575 VAC.

The wires that the signalman was securing to the crossarm contained live high-voltage. The signalman was not wearing protective clothing or insulated gloves. None of the high-voltage lines were secured or tied in.

The Accident

On the day the accident occurred, the signalman was working alone, installing new crossarms to new signal line poles. At about 11 a.m., the engineer of CNW-SEWST Extra 5061 called NY Tower operator and told him of a man hanging from a pole at milepost 87. A local rescue unit was dispatched to the scene, but the signalman had died before the rescue unit arrived.

Post-accident Investigation

While working poles carrying high-voltage lines, it is common practice to separate the lines by some means to prevent them from

coming in contact with each other. The signalman had separated the lines by placing them on the opposite sides of the crossarm pins. The lines were active while the signalman was working on them, but there were no witnesses to the accident that resulted in the electrocution of the signalman.

APPLICABLE RULES

Prior to the accident, the carrier did not have any rules pertaining to this type of work.

REPORT: 15

RAILROAD: Burlington Northern

LOCATION: Farwell, Nebraska

DATE: May 23, 1984, 1 p.m.

CAUSE: The accident was caused by the failure of a rerailing crew to secure a car from rolling during rerailing operations.

EMPLOYEE:

Occupation	Carman
Age	29 years
Length of Service	10 years
Last Rules Training	Not required
Last Safety Training	March 27, 1984
Last Physical Examination	May 14, 1984

Circumstances Prior to the Accident

On the day of the accident, a rerailing crew, consisting of 11 carmen, a general car foreman and an assistant general car foreman, was assigned to rerail two loaded tank cars and one caboose in Farwell. Arriving at the derailment site at about 8:50 a.m., the crew unloaded sideboom crawler-type tractors from their trailers and prepared them for use in rerailing the derailed cars.

The first car, PSPX252 was rerailed at approximately 12:25 p.m. The second derailed car, PSPX201 had the "A" end derailed in soft ground up to the level of the running board. The car was leaning approximately 30 degrees due to the sloping terrain on the south side of the track.

The lead carman instructed the subject carman and two other carmen to prepare to raise this car by its body bolsters. Since the "A"-end body bolster was partially buried in the ground, the carman had to dig a small hole beneath the body bolster so that a cable could be placed around the bolster.

Without taking any safety precautions to prevent the car from rolling, the subject carman began digging under the left side of the "A" body bolster. Prior to the accident, the carman was lying on the ground digging with a 4-inch spade facing the "B"-end of the car.

The Accident

The lead carman, who was standing approximately 25 feet south of the car, saw PSPX201 begin to roll toward the south and shouted a warning. However, the carman was unable to escape and was crushed when the car rolled on top of him.

An ambulance was summoned, and, through the use of a sideboom tractor, the car was removed from the body of the employee. The ambulance arrived at 1:25 p.m., and the carman was pronounced dead at the scene by the county coroner.

Post-accident Investigation

The surface of the ground near the derailment was very soft and soggy because of above-normal spring rains. The loaded tank car sank into the soft ground to the level of the running board, and no safety precautions were taken to keep the loaded tank car from rolling or shifting.

Applicable Rules

Burlington Northern Railroad Safety Rules and General Rules

1. Safety is of the first importance in the discharge of duty. In case of doubt or uncertainty, the safe course must be taken. Employees who persist in unsafe practice to the jeopardy of themselves and others will be subject to discipline even though the act or acts do not violate a rule.

567. Employees must:

a. Not incur risk which can be avoided by exercise of care and judgment.
b. Take time to work safely.
c. Exercise care to prevent injury to themselves and other.

REPORT: 16

RAILROAD: Denver and Rio Grande Western Railroad Company (DRGW)

LOCATION: Pueblo, Colorado

DATE: May 29, 1984, 5:15 a.m.

CAUSE: Failure of the locomotive foreman to stay clear of moving equipment.

EMPLOYEE:	Occupation.	Locomotive foreman
	Age	41 years
	Length of Service	23 years
	Last Rules Training	December 15, 1983
	Last Safety Training.	May 8, 1984
	Last Physical Examination	June 6, 1961

Circumstances Prior to the Accident

The DRGW locomotive servicing facilities in Pueblo consist of seven tracks that run in an east-west direction, on a 0.48-percent grade descending westward. The mechanical employees reporting for work at 11 p.m. on the day of the accident included a locomotive foreman, two machinists, one hostler, and one laborer. At the time of the accident, the foreman and the hostler were working together to move some locomotives on the service tracks.

In the area of the accident, all track movements are made within yard limits. The speed in the locomotive service area is restricted to 5 mph, and the area is well illuminated by mercury-vapor overhead light fixtures.

On the day of the accident, three locomotives (DRGW 5353, SP 9260, DRGW 3008) were coupled together on Track No. 4. Locomotive DRGW 3008 was on the west end of the consist with its short end facing westward. The locomotive foreman told the hostler that the locomotives were to be moved to Track No. 7 and instructed him to release the brakes on the locomotives. The hostler walked to DRGW 3008, the lead locomotive, to await the return of the locomotive foreman. The hostler stated that he saw the locomotive foreman coupling the air hose between the first and second locomotives and assumed that all three locomotives would be coupled. The locomotive foreman returned and mounted the west stairwell of Locomotive DGRW 3008 and signaled the hostler to proceed westward.

The Accident

The two leading locomotives were not coupled to DRGW 5353 and moved from Track No. 4 in a westward direction to clear the switch on Track No. 7. As the hostler reduced the speed of the locomotives, the foreman alighted from the front of Locomotive DRGW 3008 at the Track No. 7 switch. When the two locomotives cleared the switch, he gave the hostler a signal to stop, and he crossed over toward the switch-stand of Track No. 7. The foreman then disappeared from the hostler's view. The hostler glanced in the rearview mirror and noticed Locomotive DRGW 5353 rolling west from Track No. 4 towards his consist. At this time, Locomotive DRGW 5353 was about 75 feet east of his consist.

The hostler, assuming that a crew was bringing the single locomotive out of Track No. 4, sounded the whistle; however, Locomotive DRGW 5353 continued to move and struck the two standing locomotives. The hostler quickly dismounted Locomotive DGRW 3008 to see what had happened to the foreman. He found the foreman's hardhat lying outside the rail on the north side of Track No. 7. Then he noticed the foreman lying under Locomotive DRGW 5353. An ambulance was called, but the foreman was pronounced dead on the scene.

Post-accident Investigation

Apparently, the hostler and the locomotive foreman did not reach an understanding, or agreement, as to which locomotives were to be moved.

The locomotive foreman's actions indicated that he only intended to move the two leading locomotives; but the hostler believed that all three locomotives were to be moved, and he released the brakes on the three locomotives.

The employees failed to communicate to each other exactly which locomotives were to be moved, and as a consequence, the release of brakes on Locomotive DRGW 5353 allowed it to roll free.

Applicable Rules

Rio Grande -- Operating Rules
General Rules

M. . . .
Employees must expect the movement of trains, locomotives, cars or other equipment at any time, on any track, in either direction.

Rio Grande -- Safety Rules
Operating Department

O. Teamwork is essential to safety. When working in groups, all concerned must understand the moves to be made.

REPORT: 17

RAILROAD: Norfolk and Western Railway Company

LOCATION: Jenkinjones, West Virginia

DATE: June 8, 1984, 10:45 a.m.

CAUSE: A brakeman either lost his balance, footing, or his handhold while he was riding on moving equipment.

EMPLOYEE:	Occupation.	Brakeman
	Age	25 years
	Length of Service	7 years
	Last Rules Training	March 13, 1984
	Last Safety Training.	March 13, 1984
	Last Physical Examination	July 27, 1979

Circumstances Prior to the Accident

The accident area consists of one main track that extends east-west and ends about 4,000 feet east of milepost T-21. About 2,500 feet east of milepost T-21, one yard track leads off the main track on the north side, extends westward, and connects to two other yard tracks that serve the Consolidation Coal Company Jenkinjones Preparation Plant. The tracks are numbered from north to south No. 1, No. 2 (or middle), and No. 3.

The grade for westward train movements on the main and yard tracks from the end of the track to milepost T-21 is 2.50-percent ascending.

The Accident

Upon arrival at Jenkinjones, a crew proceeded to spot empty cars as instructed. The train had 47 empty hoppers for Jenkinjones. Of the 47 cars, 25 were to be spotted on Track No. 2 and 22 on Track No. 3. The first brakeman was directed to ride the lead car (NW 75094) to the end of Track No. 2; after the movement had been stopped, he was told to cross over and protect the movement of the 22 cars to be shoved onto Track No. 3.

The shoving movement on Track No. 3 was protected by hand signals; the brakeman did not have a radio to control the movement.

The conductor and the second brakeman remained at the switch to Track No. 2. When the required number of cars were placed on

Track No. 2, they proceeded to shove the balance of the empties onto Track No. 3.

After the shoving movement was halted by an emergency application of the brakes and the first brakeman failed to appear, the conductor walked to the end of Track No. 3 and discovered that two cars (SOU 351601 and NW 3165) had been shoved over the end of Track No. 3 and derailed. The conductor found the brakeman lying face down, with his right arm and right leg pinned under the lead wheel, on the south side of NW 75094, the last car on Track No. 2.

The brakeman was transported to Bluefield Community Hospital, where he died of his injuries on June 9, 1984.

Post-accident Investigation

There were no witnesses to the accident, and the final actions of the brakeman were unknown. The conductor last saw the brakeman riding the north side of the leading end of NW 75094, the lead car of 47 empty hoppers being shoved onto Track No. 2 at the Jenkinjones Preparation Plant.

The post-accident inspection of NW 75094 showed no defects that would have contributed to the accident.

Applicable Rules

Norfolk and Western Railway Company Safety Rules and Rules of General Conduct

GENERAL RULES

. . . . . .

A. Safety is of the first importance in the discharge of duty.

. . . . . .

GENERAL SAFETY RULES

. . . . . .

GETTING ON OR OFF EQUIPMENT

1070. When getting on or off or up or down on equipment, employees must use steps, ladders, and grab irons provided for this purpose.

1071. Except in cases of emergency, employees must not attempt to get on or off locomotives or cars moving in excess of a

brisk walking speed. Special consideration must be given to weather and ground conditions; and when these factors so demand, additional precautions must be taken. . . .

1072. When mounting or dismounting moving equipment, employees must get on or off the trailing end of the rear car if practicable. If necessary to get on or off other than rear car, use the lead end of that car if practicable.

REPORT: 18

RAILROAD: Consolidated Rail Corporation

LOCATION: Morrisville, Pennsylvania

DATE: June 21, 1984, 7:50 a.m.

CAUSE: A conductor failed to place himself in a safe position on the leading end of the car during movement.

EMPLOYEE:

Occupation.	Conductor
Age	54 years
Length of Service	30 years
Last Rules Training	January 25, 1984
Last Safety Training.	January 25, 1984
Last Physical Examination	March 4, 1977

Circumstances Prior to the Accident

The Morrisville Classification Yard consists of 38 parallel tracks, west to east, from the automatic hump apex; they make up the yard bowl. During hump operations, car speed is controlled by a master retarder on the hump lead, an intermediate lead retarder, and a secondary retarder at each track group. All tracks have a descending grade from the west, and six tracks make up the southern retarder group. The track gradient is 0.06-percent descending. The conductor was a member of a three-man crew, including an engineer and a brakeman which had reported for duty at 7 a.m.

The accident occurred at 7:50 a.m. on Track No. 40, about 260 feet east of the west access switch. During hump operations, three cars were held at the secondary retarder group, tracks 40-45, while the balance of the draft was humped. The locomotive shoving two cars coupled to the three at the secondary retarder. Upon boarding the southeast corner of the east car of the five car cut, the conductor instructed the engineer, via radio and hand signal, to proceed eastward toward and onto Track No. 40. The engineer, facing east, was seated at the locomotive controls on the south side, with the short hood end of the locomotive facing east. He saw the conductor board the car which was going at 3 mph and move from the sill step and side ladder toward the east end of the car.

The Accident

As the movement progressed, the engineer could not observe the east car and the conductor because of the curvature of the track. The brakeman seated on the fireman's side of the locomotive facing east was also unable to see the conductor. Adjacent to Track No. 40, a draft of cars stood at the west end of Track No. 41. After moving 8 carlengths east, the engineer attempted radio contact with the conductor. The engineer continued the movement eastward, still unable to reach the conductor by radio; then he stopped toward the east end of Track No. 40, at a second coupling. The engineer, became alarmed and asked the brakeman to check on the conductor. A short time later, the conductor was found by the engineer of another crew lying between tracks 40 and 41, at the west end of Track No. 41 under the car door side-sill of the west car on Track No. 41. At 8:20 a.m., the conductor was pronounced dead on the scene by the county coroner.

Post-accident Investigation

A reenactment of the accident, using the same equipment revealed that the conductor, while riding the car, placed himself in a dangerous position of close clearance measuring 6 3/4 inches at the nearest point between two cars. The employee was familiar with the physical characteristics of Morrisville Yard and should have known of the close clearances. Compliance with Rule 707 would probably not have prevented the accident in this particular case, since the fatality occurred after a movement of only 8 carlengths. However, the engineer should have stopped the movement after he could not establish radio communication with the conductor, in accordance with Rule 707.

APPLICABLE RULES

CONRAIL SAFETY RULES

Train, Locomotive and other Transportation Employees

1703. . . (g) Do not sit, stand, walk, or ride on side equipment in close clearance areas.

CONSOLIDATED RAIL CORPORATION
Rules of the Transportation Department

707. When radio is used in operations such as switching, backing or pushing of a train, engine, or cars, employee directing movement shall give complete instructions or keep in continuous radio contact with employees receiving these instructions.

When backing or pushing a train, engine or cars, the distance of the movement must be specified, and the movement must stop in one half the remaining distance unless additional instructions are received. If instructions are not understood or continuous radio contact is not maintained, movement must be immediately stopped and remain stopped until misunderstanding has been resolved, communication is made by words, radio contact is restored, or proper hand signal has been received.

REPORT: 19

RAILROAD: St. Louis Southwestern Railway Company (SSW)

LOCATION: Plano, Texas

DATE: June 25, 1984, 4:15 p.m.

CAUSE: The unexpected release of a hydraulic system allowed a mower to fall on top of a machine operator.

A contributing factor was the failure of the machine operator to block the mower housing while he was working underneath the mower.

EMPLOYEE:		
	Occupation.	Machine operator
	Age	52 years
	Length of Service	14 years
	Last Rules Training	No record
	Last Safety Training.	March 1984
	Last Physical Examination	No record

Circumstances Prior to the Accident

The accident occurred on the SSW's right-of-way, 683 feet north of North Star Road within the city limits of Plano. A machine operator, working alone, was on a tractor-mower mowing a relatively level railroad right-of-way.

The Accident

The machine operator was mowing on the east side of the track, north of the North Star Road, when the blade of the mower entangled itself in some carpet-type material. The machine operator raised the mower to clear some broken concrete and other debris; he traveled 10 feet farther, raised the mower again, and stopped the engine. He then alighted from the tractor and, lying on his back with the upper right portion of his body underneath the mower, attempted to clear the entangled blade. The hydraulic lift mechanism released, dropping the 877-lb. mower onto the machine operator's chest, and causing him to sustain multiple crushing and internal injuries.

The machine operator was not found until about 1 p.m., when he was spotted by a maintenance-of-way foreman returning to Plano on a motor car. The Plano police, fire department, and emergency medical ambulance arrived at the scene at 1:13 p.m. The operator

was removed to the Plano General Hospital where he was pronounced dead at 4:15 p.m. However, there were no signs of life when the machine operator was first discovered.

Post-accident Investigation

As there were no witnesses to the accident, the post-accident reconstruction follows. The machine operator was operating a 1974 IHC 2500 Series B Model 12500B Tractor equipped with Bush Hog Model 306 Mower operated from a power take-off. Purchased in July 1974, the tractor-mower was last overhauled on April 2, 1984. The mower, which had a cutting width of 5 feet and weighed 877 pounds, could be raised and lowered by a hydraulic lift mechanism on the tractor. The tractor and the mower had been moved from Commerce, TX, to Plano, on the day of the accident.

When the tractor-mower was examined, it was found with the diesel engine shut off, the ignition key in the "ON" position, the transmission lever in third gear, the transmission in "NEUTRAL," the power take-off in the "OFF" position, and the power life in the "UP" position.

Tests conducted on the hydraulic system of the tractor-mower revealed that the upper limit of lift of the mower by the hydraulic system varied from 13 to 15 inches. When the mower was raised 13 inches or more and the engine was shut off, the hydraulic system would not release, and the mower would stay in the raised position. However, when the mower was raised 13 inches or less and the engine was shut off, the hydraulic system would release and allow the mower to drop within 20 seconds.

Applicable Rules

The carrier has no specific applicable rules.

REPORT: 20

RAILROAD: Southern Railway Company

LOCATION: Nebo, North Carolina

DATE: June 5, 1984, 3:55 p.m.

CAUSE: Heat stroke complicated by acute coronary artery thrombosis.

EMPLOYEE:	Occupation.	Track laborer
	Age	39 years
	Length of Service	7 years
	Last Rules Training	No record
	Last Safety Training.	May 1984
	Last Physical Examination	October 1975

Circumstances Prior to the Accident

At milepost 92.7, near Nebo, a laborer was performing his assigned duties -- assisting in the unloading of a 48-car ballast train. The train was moving up a slight incline at a speed of 2-2 1/2 mph. While unloading the ballast, the laborer complained to his track supervisor that he was having trouble opening a hopper door. The supervisor assisted the laborer and was surprised when the door opened easily.

The Accident

Approximately 10 minutes later, the victim collapsed. Fellow workers stated he was not perspiring and was semiconscious. The supervisor determined medical attention was needed and ordered the train to move to the next crossing. The train crew contacted the dispatcher and asked for an ambulance to meet them at the crossing. Emergency medical personnel administered first aid and transported the laborer to Grace Hospital, Morganton, NC, where he was pronounced dead on arrival.

Post-accident Investigation

The temperature at the time of the accident was 94° F., with 73 percent humidity. The laborer reported for duty in Hickory, NC, at 7:30 a.m., but had not actually started unloading ballast until 12:30 p.m. After he collapsed, his fellow employees tried to assist him, but as they had no first aid training, they did not recognize the symptoms of heat stroke. The laborer was

semiconscious and incoherent. His body temperature at 1 hour and 20 minutes after his death was 105° F.

The laborer, 5 feet 10 1/2 inches tall and weighed 215 pounds; this weight, in combination with the high temperature and humidity and the physical exertion involved contributed to the accident.

The pathologist who performed the autopsy and the coroner who signed the death certificate were adamant in their diagnosis of "death caused by heat stroke complicated by acute coronary artery thrombosis with underlying focally severe coronary artery atherosclerosis, accident." In an interview, the pathologist stated that death was the result of accidental not natural causes.

Applicable Rules

The carrier has no applicable rules.

REPORT: 21

RAILROAD: Consolidated Rail Corporation

LOCATION: Enola, Pennsylvania

DATE: June 30, 1984, 6:24 p.m.

CAUSE: Excessive lateral forces, generated by an "overspeed" coupling against closed knuckles, caused a car to shift off-center for a sufficient distance to strike a brakeman who was walking between the tracks.

Alcohol use may have been a contributing factor.

EMPLOYEE:		
	Occupation	Brakeman
	Age	56 years
	Length of Service	21 years
	Last Rules Training	August 17, 1983
	Last Safety Training	No record
	Last Physical Examination	March 19, 1982

Circumstances Prior to the Accident

The accident occurred on Track No. 34 in a westbound classification yard in Enola. The yard consists of 36 parallel tracks extending east and west; the grade descends slightly westward.

The brakeman was a member of a yard crew that included an engineer and a brakeman on each of three make-up engines, four field brakemen, three retarder operators, a hump conductor, and a car cutter. The crew had been on duty 3 hours 24 minutes.

Shortly before the accident, the brakeman had been coupling the cars on Track No. 35 and was walking to the east towards his make-up engine. While the brakeman was walking between Track Nos. 34 and 35, cars were being switched over the apex of the hump towards various tracks, including Track No. 34.

The cars on Track No. 34, from west to east, consisted of a group of 13 cars with four handbrakes applied and a group of 3 empty covered hoppers. The knuckle on the east end of the 13 cars was closed as was the knuckle on the west end of the 3 covered hoppers.

The Accident

A cut of 11 loaded hopper cars was released onto Track No. 34 from the "B" tower retarder and coupled to the 3 empty covered hopper cars, shoving them to the west and striking the cut of 13 cars. The car body on the west end of the west car of the 3-car cut of empty covered hoppers was raised off-center from the truck bolster and projected to the north. It struck the brakeman in the head.

After waiting a reasonable length of time for the brakeman to return to the make-up engine, the west hump yardmaster called him on the radio, but got no response. Then some of the other employees began searching the yard in the area of Track No. 34. One employee found a car on Track No. 34 was off-center and projected into the cars on Track No. 35. He then found the brakeman unconscious, lying face down, with the right side of his face on the ground. His head faced west and feet were pointed east.

The brakeman was taken to Polyclinic Medical Center in Harrisburg, PA, where he died on July 7, 1984.

Post-accident Investigation

The brakeman had completed his assigned duties, coupling the cars together on Track No. 35, and was returning to his assigned make-up engine. He apparently did not recognize the potential danger of the 11 coal cars striking the 3 empty cars nor did he possess adequate reflexes to avoid being struck by the off-center car on Track No. 34.

The coroner's report shows the brakeman's blood alcohol content as 0.167 percent when he was admitted to the emergency room. Pennsylvania law considers a person to be under the influence of alcohol if the blood alcohol level is 0.10 percent or higher.

Other crew members stated that the employee showed no indication of being under the influence of alcohol when he reported for duty. They did not see him drinking alcohol while on duty.

Applicable Rules

> General Rule G - The use of intoxicants, narcotics, amphetamines or hallucinogens by employees subject to duty, or their possession or use while on duty, is prohibited.

REPORT: 22

RAILROAD: Chesapeake and Ohio Railway Company

LOCATION: Oregon, Ohio

DATE: July 23, 1984, 4 a.m.

CAUSE: The brakeman failed to check that a switch was properly lined for a train movement.

As a contributing factor, a locomotive was fouling the crossover track.

EMPLOYEE:		
	Occupation.	Brakeman
	Age	32 years
	Length of Service	14 years
	Last Rules Training	June 20, 1984
	Last Safety Training.	June 20, 1984
	Last Physical Examination	May 17, 1984

Circumstances Prior to the Accident

The Toledo Docks in Oregon, OH, has a facility for loading iron ore into hopper cars. Five tracks lead southward from this facility to a classification yard. From east to west, the tracks are called: Office pocket, No. 1 Lead, No. 2 Lead, No. 3 Lead, and No. 4 Lead. From No. 3 Lead Track, there is a crossover track stretching south to No. 4 Lead. Northward from the crossover switch at Track No. 4 Lead is a pocket track for placing locomotives not in use. The switches have banners to indicate the position of the switch.

The brakeman (not a regular on switching assignments at the Toledo Docks) was a member of a yard switching assignment (locomotive CO 3874) crew consisting of a conductor, two brakemen, an engineer, and a fireman. The crew had been on duty for 5 hours.

Shortly before the accident, the engineer and one brakeman of another crew moved a single locomotive, CO 7565, from Track No. 3 Lead through the crossover track to Track No. 4 Lead. The locomotive was next moved northward toward the pocket in Track No. 4 Lead; and the engineer and the brakeman joined the crew at the yard office. Then, the engineer returned to the locomotive cab of CO 7565.

The Accident

At about 4 a.m., Locomotive CO 3874 and five loaded hopper cars were moving southward on Track No. 3 Lead toward the crossover switch. The fireman was operating the locomotive from his position on the west side of the locomotive; the engineer was in the fireman's seat; the head brakeman was on the front steps of the locomotive; and the rear brakeman -- who was fatally injured -- was riding the southwest corner of the fifth, or lead, car. As the lead car moved through the crossover toward Track No. 4 Lead, the rear brakeman was crushed between the car he was riding and the left front corner of Locomotive CO 7565 which was stationary and fouling the crossover.

The fireman of Locomotive CO 3874 stopped the movement when he could no longer see the rear brakeman's lantern. The surviving crew members believed that this move was to be on No. 3 lead track and that they were not supposed to use the crossover leading to Track No. 4 Lead.

The only witness, an engineer on standing Locomotive CO 7565, saw the brakeman's lantern immediately before the accident. He shouted a warning but received no response.

Post-accident Investigation

A post-accident inspection of the locomotive CO 7565, the hopper car, and the crossover switch on Track No. 3 Lead, including its banner, revealed no defects that could have contributed to the accident.

Locomotive CO 7565 was in a position to foul the crossover track from Track No. 3 Lead to Track No. 4 Lead.

The crossover switch leading from Track No. 3 Lead to Track No. 4 Lead was incorrectly lined for crossover movement; instead, it should have been lined for the straight movement that had been anticipated by the crew of Locomotive CO 3874.

Applicable Rules

Chessie System Operating Rules

. . . . . .

Rule 103-K. Cars must not be left fouling an adjoining track when it can be avoided. . . .

Rule 104-D. Before giving a signal for a movement, employees lining hand-operated switches and derails must see that the:

(1) Route is lined

. . . . . .

REPORT: 23

RAILROAD: Southern Pacific Transportation Company

LOCATION: Grass Lake, California

DATE: August 8, 1984, 2:05 p.m.

CAUSE: A laborer failed to place himself a safe distance from an oncoming train.

EMPLOYEE:	Occupation.	Laborer
	Age	56 years
	Length of Service	31 years
	Last Rules Training	July 11, 1984
	Last Safety Training.	July 11, 1984
	Last Physical Examination	January 1952

Circumstances Prior to the Accident

The accident occurred at a point where the distance between the centers of the siding track and the main track measures 13 ft. 2 in. The track is in the spiral of a 3-degree curve and the grade is practically level.

Extra 9375 West departed Klamath Falls, OR, en route to Dunsmuir, CA, on the morning of the accident. The train had moved through a series of reverse curves in mountainous terrain and was approaching a rock cut that restricted the crew's view of a track-surfacing operation.

A member of the track-surfacing crew, a laborer was assigned to work with a tamper machine, nipping crossties, adjusting rail anchors, and performing necessary spiking to accommodate the tamper. The machine was working on the siding at milepost 369.2, and the laborer was standing near the tamper, between the siding and the main track (but not clear of the main track) with his back to the oncoming train.

Operations on the siding are governed by signal indications of a traffic control system. A train dispatcher authorized the surfacing foreman to work on the siding between 12:10 p.m. and 2:30 p.m. The foreman was near the ballast regulator operator and the ballast machine, approximately 240 feet west of the tamper.

The Accident

As the train cleared the rock cut, the engineer saw the tamper and the laborer on the siding, approximately 442 feet ahead of Extra 9375 West. He sounded the locomotive horn and the bell was ringing as the train traveling at approximately 32 mph approached the work site. It struck the laborer and he was pronounced dead at the scene.

Post-accident Investigation

Although he was standing between the tamper and the main track, the laborer was not clear of the main track. As the train approached with the locomotive horn sounding and the bell ringing, the laborer apparently did not hear the horn or the bell because of the noise from the working tamper.

Applicable Rules

Southern Pacific Transportation Company Rules and Regulations of the Transportation Department effective October 31, 1976.

General Rule N:

Employees must expect the movement of trains, engines or cars at any time, on any track, in either direction.

. . . . . .

REPORT: 24

RAILROAD: Southern Pacific Transportation Company

LOCATION: Staples, Louisiana

DATE: August 14, 1984, 10:40 a.m.

CAUSE: While repairing a bridge, a utility manager failed to control the descent of a bent section.

EMPLOYEE:	Occupation.	Utility Manager
	Age	57 years
	Length of Service	29 years
	Last Rules Training	No record
	Last Safety Training.	No record

Circumstances Prior to the Accident

Bridge 221.73 is a 250-ft. packed-chord, open-deck, pile trestle, with five piles per bent. It stands 7 to 8 feet above undulating terrain and spans a narrow creek bed. Located 8.9 miles southwest of Shreveport, LA, the structure is part of the Southern Pacific track between Shreveport, LA, and Houston, TX. At the time of the accident, the creek bed was dry.

The Buildings and Bridges (B&B) utility manager was supervising the removal of wood bents and stringers on Bridge 221.73 before replacing them with steel and concrete bents and spans.

Using chain saws, the five pilings of the first bent were cut from top to bottom, north to south, with 1 to 1 1/2 inches left uncut on two of the five piles. Four men standing on the ground pushed the bent in a southerly direction, splintering the uncut portion and toppling the bent to the south.

The Accident

The five pilings of the second bent were then cut at a 45-degree angle, top to bottom, north to south. The B&B utility manager positioned himself on the north side between the fourth and fifth pile and, with another man, was ready to push the bent southward. When the last pile was cut completely, the bent with five piles slid towards the south, balanced there for 2 to 3 seconds, and toppled to the north. The B&B Utility Manager was crushed in a sitting position, and the second man was pinned in a reclining position. The bent weighed between 3,000 to 3,500 lbs.

About 20 minutes after they were notified, the Shreveport Fire Department paramedics arrived on the scene. At the hospital, the

B&B utility manager was pronounced dead as a result of internal injuries caused by the crushing weight of the bent.

Post-accident Investigation

The B&B utility manager placed himself in a hazardous position when he chose to take part in the physical work instead of the supervisory surveillance.

The timber pilings of the bent were cut at a 45-degree angle, an angle so severe that there was not any bearing surface to restrain the movement of the bent. If these cuts were done the same way as the first bent, there would have been a restraining force which could have permitted the toppling of the bent. Some other type of restraint such as attaching a cable to the bent, could have been used, which would have allowed the bent to fall in only one direction.

Applicable Rules

Southern Pacific Transportation Company, Rules and Regulations for the Maintenance of Way and Structures

M818. Foremen and others in charge of work are responsible for the safety of their men and must see that no unnecessary risks are taken. They shall bear in mind that safety is the first and most important consideration.

Employees must do all possible to prevent accidents even though in so doing they may necessarily perform the duties of others. In case of doubt, the safe course must be taken.

. . . . . .

REPORT: 25

RAILROAD: Consolidated Rail Corporation

LOCATION: Chicago, Illinois

DATE: August 17, 1984, 12:15 a.m.

CAUSE: A conductor lost his balance and fell under a train.

EMPLOYEE:

Occupation	Conductor
Age	30 years
Length of Service	9 years 10 months
Last Rules Training	December 14, 1983
Last Safety Training	No record
Last Physical Examination	August 3, 1983

Circumstances Prior to the Accident

Two main tracks run through the Conrail yard at the Park Manor Trailvan Terminal. There are six tracks north of the main tracks and in the accident area, all the tracks are practically level. (West-to-east timetable directions will be used throughout the report.)

The conductor was a member of a yard switching crew, consisting of himself, a brakeman, and an engineer. The crew had been on duty for 1 hour and 45 minutes after completing the required off duty period. They had coupled three locomotives to 34 cars on the eastern end of Track No. 7. The engineer was operating the front locomotive, and the brakeman was standing on the platform of the rear locomotive on the southwest side. The conductor was standing on the bottom step of the rear locomotive also on the southwest side. Train movements were directed by radio.

The Accident

After the cars were pulled eastward for about 2 car lengths, the engineer told the conductor to inspect the cars for air leakage. According to the engineer, the train had moved about 2 more car-lengths when the brakeman told the engineer to stop the movement. The conductor tried to get off the rear locomotive and either tripped or lost his balance possibly stepping on the rail of the adjacent track. As he fell, his head went under the wheel of the first car, and he was killed instantly. His body was found under the fourth car from the rear locomotive.

Post-accident Investigation

The conductor got off the bottom step of the rear locomotive on the southwest side; apparently he lost his balance possibly stepping on the rail of the adjacent track and fell under the wheel of the first car.

Applicable Rules

Conrail Safety Rules

Train, Locomotive and other Transportation Employees

ON OR ABOUT EQUIPMENT

. . . . . .

1700.(a) Place feet firmly and have secure handhold when getting on or off equipment.

(b) Place feet firmly and have secure handhold when ascending or descending ladder or steps.

. . . . . .

1702.(a) Get on or off moving equipment only when necessary for the proper performance of duty, and then only when the length of the train or draft, or the location makes it impracticable to stop the equipment.

. . . . . .

1705.(a) When riding on or getting off standing or moving equipment use rear step, away from main or live track if practicable and not in confined space.

(b) When riding on or getting on or off standing or moving equipment look for, remove if practicable, and stay clear of any obstruction, opening or other such hazard.

REPORT: 26

RAILROAD: Seaboard System Railroad

LOCATION: Napfor, Kentucky

DATE: August 25, 1984, 1:35 a.m.

CAUSE: An off-duty trackman failed to stay clear of the main track.

A probable contributing factor was the impairment of the trackman by alcohol and an over-the-counter drug.

EMPLOYEE:	Occupation.	Trackman
	Age	33 years
	Length of Service	10 years
	Last Rules Training	No record
	Last Safety Training.	April 18, 1984
	Last Physical Examination	No record

Circumstances Prior to the Accident

The accident occurred on the southbound main track of the Corbin Division, approximately 84 miles south of Ravenna, KY. On the day of the accident, the northbound main track had been removed from service to allow a replacement of rail by a system rail crew. Their equipment, including camp cars, occupied the northbound main track at Napfor.

The trackman was a member of the rail crew billeted in the camp cars on the northbound main track. He had completed a 10-hour tour of duty at 4:30 p.m., the day prior to the accident.

After his tour of duty on August 24, 1984, the trackman joined two other members of the rail crew and drove to Hazard, KY, where they purchased some liquor; drove back to the camp site and consumed the liquor. One retired for the evening at about 10 p.m.; another retired about 12 midnight; the trackman did not retire. At approximately 1 a.m., another member of the crew saw the trackman pass through one of the cars in search of the foreman. The whereabouts of the trackman from this time until the accident are unknown.

Extra SBD 1489, a northbound freight train consisting of 66 loads, 20 empties, and a caboose, passed the accident point at 1:35 a.m. the day of the accident at an estimated speed of 25 mph. At that time, a heavy fog blanketed the area, limiting visibility.

The engineer and the front brakeman were in the control compartment of the locomotive which was being operated with the short hood forward. The conductor and the flagman were aboard the caboose.

The Accident

As the locomotive traveled past the camp cars, the front brakeman saw an object that he could not identify near the west rail. Immediately thereafter, both forward crew members heard a noise as the locomotive struck the object. The engineer radioed the conductor and asked him to inspect the area to determine what the locomotive had struck. The conductor reported that neither he nor the flagman saw anything unusual, and the train continued toward its destination.

Post-accident Investigation

At 6:30 a.m., the trackman's body was discovered in a ditch west of the track structure, and he was pronounced dead at the scene by the county coroner. An autopsy indicated that he died from multiple injuries to the head and neck.

A chemical examination of the blood revealed an ethyl alcohol content of 0.27 percent, by weight. Further, the stomach contained three pills containing chlorpheniramine; this substance was present in both the blood and the urine. Under the laws of most states, including Kentucky, a person is presumed to be intoxicated if the blood alcohol level is 0.10 percent or more. Medical and scientific literature establishes that a blood alcohol level of 0.27 percent, balance and movement are definitely impaired and motor and emotional control centers are measurably affected.

It is reasonable to presume that the trackman's sense of direction and mobility was impaired by the ingestion of alcohol and chlorpheniramine.

Applicable Rules

Seaboard System Railroad Safety Rules for Engineering and Maintenance of Way Department

GENERAL RULES

. . . . . .

G. The use of intoxicants, narcotics, sedatives, stimulants, hallucinogens, or a derivative or combination of any of these, or any controlled substance, or an illegal drug, or drug paraphernalia by an employee subject to duty, or the use or possession of any of these by an employee while on duty, while on

Company property, while occupying facilities paid for or furnished by the Company, or at any time that such use or possession subjects the Company to criticism or loss of good will, is prohibited and will subject the offender to disciplinary action, including dismissal.

ON OR ABOUT RAILROAD PROPERTY

. . . . . .

150. Except in direct line of duty, employees are prohibited from being on railroad tracks. When required to be on or about tracks, employees must be alert, watchful and keep out of danger, exercising care to avoid injury to themselves and to others. Always look in both directions before stepping on or getting close to any track, even when you know there is no movement on the track.

REPORT: 27

RAILROAD: Norfolk and Western Railway Company

LOCATION: Catlin, Illinois

DATE: August 30, 1984, 1:47 p.m.

CAUSE: A machine operator fouled the main track while he was operating a bulldozer.

EMPLOYEE:		
	Occupation.	Machine operator
	Age	34 years
	Length of Service	10 years
	Last Rules Training	December 5, 1983
	Last Safety Training.	No record
	Last Physical Examination	March 5, 1980

Circumstances Prior to the Accident

The accident occurred at milepost 308.3, west of Catlin, IL, where there is a single main track near the center of a 1-degree curve to the left. The almost level track was constructed of welded rail supported on crushed stone ballast. Trains in the area operate as extras controlled by a traffic control signal system. The maximum allowable speed is 45 mph.

The machine operator was using a Caterpillar No. 931 Bulldozer equipped with a front-end loader bucket for excavation. Although the equipment was leased, it had a safety inspection.

The operator of the front-end loader was burying tie butts in the ditch line north of the right-of-way. The front-end loader moved in a direction south-to-north from the ballast line to the right-of-way fence, a distance of 25 to 50 feet perpendicular to the main track. The operator had asked a track laborer to help him, and the laborer was standing on the east side of the front loader and did not see the approaching train. At the time of the accident, the laborer was manually throwing tie butts into the hole excavated by the front-end loader, and he remembered nothing of the accident. The laborer had not been examined on the carrier rules and was unfamiliar with flagging procedures.

They had worked for about 2,500 feet when the accident occurred. Evidence of tie markings made by the tracks of the front-end loader on the north-tie ends of the main track indicates the operator had backed his machine onto the track for a considerable distance.

At this time, freight train Extra 1361 East consisting of 4 locomotives and 64 cars, was moving eastward at about 49 mph. The lead locomotive had the long hood forward. The engineer was operating the dual-control locomotive from the south side of the control cab. The fireman was seated on the north side of the control cab. A brakeman was seated on the north side of the third locomotive. As the train was entering the 1-degree curve to the left at milepost 308, the engineer's view of the track ahead was obscured by brush. The headlight of the train was on "bright", and the horn was sounding because of public and private grade crossings in the area. The train crew did not have a train order or bulletin order warning them of men and equipment near the track.

The Accident

At a point approximately 500 to 600 feet from point of impact, at milepost 308.3, the fireman saw the bulldozer backing toward the track, and it appeared the bulldozer would foul the main track. The fireman called a warning to the engineer who immediately made an emergency application of the automatic brake just before impact. The brakeman in the third locomotive did not see the accident. Upon impact, the cab was torn from the front-end loader, and the machine operator died instantly from massive head injuries. The track laborer was critically injured when he was struck by unidentified flying debris.

Post-accident Investigation

Post-accident statements of the train crew members indicate that on previous occasions they had observed equipment near the track, but not in a position to foul. The crew knew the carrier rules that go into effect when members are informed by train order or bulletin that track work is being performed, as well as what action they should take.

Before the accident, the train crew had been in radio communication with other crews, as well as the dispatcher, but there was no mention of maintenance-of-way personnel on the track.

Although there was a wayside telephone about 2,500 feet from the work area, the machine operator did not use it to get a current lineup of trains, nor did he use any signal equipment, i.g. fusees or torpedoes, for protection. His work area would seem to indicate, by sight, that a train approaching from the west would be obscured by the brush and train crew members would not be able to see his low profile in the ditch line. The investigation also indicates that the operator could have completed his task by maneuvering the front-end loader without fouling the main track.

Applicable Rules

Norfolk and Western Railway Company
Safety Rules and Rules of General Conduct

. . . . . .

WORKING ON OR ABOUT TRACKS

1051. Employees on or about tracks must be alert, watchful and keep out of danger, exercising care to avoid injury to themselves and others. Nothing in these rules is to be construed as relieving any employee from performing full duty in this respect.

. . . . . .

Operating Rules

. . . . . .

108. In case of doubt or uncertainty, the safe course must be taken.

REPORT: 28

RAILROAD: New Jersey Transit Rail Operations, Inc.

LOCATION: Morristown, New Jersey

DATE: August 21, 1984, 6 p.m.

CAUSE: Employees did not lower the boom on a truck.

EMPLOYEE:	Occupation	Repairman
	Age	31 years
	Length of Service	1 year
	Last Rules Training	No record
	Last Safety Training	August 21, 1984
	Last Physical Examination	August 23, 1983

Circumstances Prior to the Accident

The accident occurred on Morris Street under a bridge carrying the two main tracks of NJ Transit's Morristown Line, in an urban area with level terrain.

The repairman had worked the day in the Morristown Station area assisting other NJ Transit employees in a cleanup operation. At 5:30 p.m., the repairman and another employee loaded a lawn mower and a steam jenny into a dump truck which had a boom. The boom was in a raised position when the equipment was put on the truck. After loading, the repairman and the other employee took their places in the cab of the vehicle as passenger and driver, respectively. At 5:50 p.m., the truck left the Morristown Station parking lot and proceeded east on Morris Street. As it was passing the station parking lot, two other carrier employees noticed the boom on the truck was still in the raised position, and they shouted to the occupants in an attempt to stop the truck before it reached the railroad bridge that crossed over Morris Street.

The Accident

The employees did not hear the warnings and proceeded east until the raised boom struck the bottom of the overhead bridge. The truck rolled on its right side and came to rest against the bridge support on the south side of Morris Street. The cab was crushed, and the repairman was taken to the Morristown Hospital where he was pronounced dead on arrival. The driver was seriously injured.

Post-accident Investigation

The repairman and the driver both had written certifications from the carrier on the operation of "auto, truck, and boom truck." The driver was certified on October 9, 1978; the repairman on November 15, 1984. Both employees normally worked near the equipment repair shop in Hoboken, but on this day all available forces were engaged in right-of-way and property clean-up.

Clearance between the bottom of the railroad bridge and the top of the pavement is 13 feet and is so indicated by a large warning sign near the corner of Elm and Morris streets.

When the boom of the truck is properly secured for over the road operations, the vehicle's maximum height above the roadway is 11 feet 4 inches. The height restriction is clearly posted in the cab in sight of the driver.

Applicable Rules

NJ Transit Rail Operations, Inc. Safety Rules for Maintenance of Way Employees, Effective June 1, 1981 (Conrail book is used by the carrier)

3336. Always make a walking circle inspection before entering your vehicle. This is to ensure that there are no obstructions that would prevent safe movement of the vehicle....

3342. Vehicle driver is responsible for the safe and proper operation of the vehicle in his charge and the safety of the occupants.

NJ Transit Rail Operations, Inc.
Safety Rules-Boom Truck

A. Driving the Vehicle

2. Boom must be lowered and secured.
5. Under no condition will boom truck be operated on road...without boom placed in saddle....

REPORT: 29

RAILROAD: Seaboard System Railroad

LOCATION: Jacksonburg, Alabama

DATE: September 13, 1984, 11:30 a.m.

CAUSE: A car shifted and fell on a carman.

EMPLOYEE:	Occupation.	Carman
	Age	56 years
	Length of Service	36 years
	Last Rules Training	No record
	Last Safety Training.	September 10, 1984
	Last Physical Examination	September 10, 1968

Circumstances Prior to the Accident

The accident occurred in Jacksonburg east of the main track near the north end of a siding designated as Jacksonburg siding. The track in the accident area is practically level.

Two carmen, plus a car foreman and his assistant, stationed in Mount Pleasant, TN, were assigned to make repairs to a gondola car in Jacksonburg.

On the day of the accident, the car foreman had made arrangements with the Florence switcher to meet the road repair truck at Jacksonburg and assist in repairing the off-center gondola car filled with uncreosoted cross ties. When the carmen met the switcher crew at about 10:15 a.m, they saw that the gondola was off-center on both ends and had shifted to the west side. Both center plates had broken loose, and the center pins were broken.

The car foreman and his assistant arrived 25 minutes later; the carmen were working on the "A" or north end of the car. They had placed a 50-ton air jack under the coupler, jacked the car, repositioned the center plate in the truck bolster, renewed the center pin and were letting the car back down on the truck. The air jack was removed, and the switcher crew was requested to spot the car so that the "B," or south end, could be repaired.

The Accident

The car was spotted; the locomotive remained coupled to the "A" end of the car; and the air brakes were cut out so the carman could use the train line to supply air to the jack. The "A" truck was chocked, and the jack was placed under the "B" coupler knuckle with the knuckle open in the unlocked position. The car was jacked and aligned over the truck bolster without placing a trestle stand or blocks under the car. The center plate was repositioned in the truck bolster, and the carman had crawled under the car inside the R-1 wheel position and was holding the center pin in place with a packing hook while the truck was being rolled back into place. However, the truck did not move as it should have, and while the men were determining the cause of problem, the car shifted to the east, about 10 inches, and fell off the jack, pinning the carman's head between the draft sill and the R-1 wheel flange. The jack was reset and the car jacked to free the carman. Death appears to have been instantaneous.

Post-accident Investigation

The car could not be jacked at the normal jacking position on the side by the body bolster because the carman had only brought one jack. Proper procedure was followed when the "A" truck was chocked and oak blocks were placed under the jack and on the jack head before jacking the car. A physical examination of the accident site did not reveal any indication that the footing under the jack had failed.

Applicable Rules

Safety Rules - Louisville and Nashville Railroad Company

(The Mechanical Department on the Birmingham Division of the Seaboard System Railroad uses Louisville and Nashville Railroad Company Safety Rules.)

. . . . . .

Jacks

. . . . . .

165. After jacking up, place trestle or blocks under locomotive, car and load. Going under or working on such equipment not protected by trestle stands or blocks is prohibited.

REPORT: 30

RAILROAD: Consolidated Rail Corporation

LOCATION: Dunkirk, New York

DATE: September 20, 1984, 12:26 p.m.

CAUSE: A trackman was struck in the head by a piece of stainless steel rod propelled by an off-track brush cutter.

EMPLOYEE:		
	Occupation	Trackman
	Age	59 years
	Length of Service	36 years
	Last Rules Training	March 1984
	Last Safety Training	No record
	Last Physical Examination	January 30, 1984

Circumstances Prior to the Accident

In the accident area at the Dunkirk depot there are two main tracks and a siding, running in a east-west direction. Main Track No. 2 has a roadway about 16 feet wide adjacent to it, and the track is on a fill section, 19 feet above the street. The track and the street are tangent and parallel. The fill, on a 45-degree slope from the track to the street level, was covered with vegetation.

The accident occurred at milepost 40.6 at a point approximately 90 feet south of Main Track No. 2. A trackman was assigned the job of flagman for a contract employee who was operating a backhoe equipped with a brush cutter.

The Accident

About 7:30 a.m., the trackman placed barricades at each end of 3rd Street which runs parallel to the embankment and the track. Then the trackman was assigned to warn all roadway traffic adjacent to Track 2 of the danger of flying debris from the brush cutter working on the embankment. At about 9:22 a.m., the backhoe operator saw the trackman lying on the sidewalk on the south side of the street. The operator shut the brush cutter, ran down the embankment, and found the employee in a pool of blood from a severe head wound. The trackman was taken to the Brooks Memorial Hospital, he died at 12:26 p.m., as a result of massive head trauma.

Post-accident Investigation

Physical evidence at the scene indicated that a piece of stainless steel rod propelled by the brush cutter blade had struck the trackman in the head. The piece of steel was 8 1/2 inches long, 1/4 inch in diameter and weighed 2 ounces. The velocity of the impact was strong enough to cause a fatal head injury. An examination of the blade on the brush cutter revealed a nick of the same size as the diameter of the stainless steel rod. The nick was 4 inches from the end of the blade. Other pieces of stainless steel rods were found in the cutting area, but were believed to have come from a destroyed shopping cart. As there was no eye witness, the exact circumstances of the accident cannot be determined. The trackman was not wearing an approved helmet at the time.

Applicable Rules

Conrail Safety Rules, Maintenance of Way Employees (S7-C)

3004:	When it can be avoided, employees must not rely on the watchfulness of others. They must protect their own safety.
3060:	Wear approved helmet with nape strap while on duty (except in a building or highway vehicle, unless working on same).
3267:(a)	Maintain constant lookout in the working and nearby area for employees, other persons or animals that are likely to be struck by cutter or flying debris. If employees, or other persons or animals are in the danger area, stop the operation and be sure that they are in the clear before resuming work.

REPORT: 31

RAILROAD: Seaboard System Railroad

LOCATION: Rocky Mount, North Carolina

DATE: October 11, 1984, 10:15 p.m.

CAUSE: A hostler failed to stand clear of moving equipment.

EMPLOYEE:	Occupation.	Hostler
	Age	45 years
	Length of Service	7 years
	Last Rules Training	April 7, 1984
	Last Safety Training.	No record
	Last Physical Examination	September 15, 1983

Circumstances Prior to the Accident

Rocky Mount Yard is a system of classification tracks where trains are assembled and broken up. The accident occurred at the southern end of a yard, known as "A" Yard. "A" Yard is divided into two switching leads -- the West Switching Lead, consisting of tracks 1 to 17, and the East Switching Lead, consisting of tracks 18 to 30. The East and West Leads merge at the southern end to become the Outgoing Lead.

The tracks are level with no obstructions, and the yard is illuminated by two multilight structures 1,245 feet southeast and 1,404 feet northeast of the accident site.

Shortly after 10 p.m., yard transfer assignment Y209 was instructed by the yardmaster to pull 44 cars from Track 5 in "A" Yard. This required Y209 to occupy the West Yard Lead and the Outgoing Lead. After this was done, the hostler operated the switch to permit the southward movement of the three road freight locomotives that were being operated by the hostler's helper. When they cleared the track 5 switch, the hostler operated the switch again to allow the three locomotives to proceed north to the lead. Then the hostler operated the switch so that yard transfer Y209 could replace the 44 cars.

The Accident

After the hostler operated the final switch, he walked 32 feet to the East Yard Lead and stood on the end of the ties on the west, or field, side of the track. He was facing west watching the movement of the 44 cars.

About 350 feet north on the East Yard Lead, another yard assignment--Y205--was waiting for Y209 to clear the Outgoing Lead Track in order to occupy that track. As Y209 cleared, Y205 proceeded south at 4 mph. When this occurred, the hostler standing on the west side of the East Yard Lead was struck and killed instantly by the locomotive.

Post-accident Investigation

At the time of the accident, the second transfer assignment--Y205--was using a a 1979 model GP 16 Locomotive, No. SBD 4706. Y205 was working with the long, or back, end of the locomotive facing south with the engineer on the east side, and the front switchman in the middle of the cab.

It was accepted practice for yard locomotives on the south end of the East Yard Lead to extinguish the headlight facing south to prevent an obstruction of the locomotive engineer's view when he was working on the West Yard Lead.

Applicable Rules

Seaboard System Railroad Operating Rules

HEADLIGHTS

17. DISPLAY -- On front and rear of yard and other engines by night, and by day when weather conditions impair visibility.

. . . . . .

17-B. DISPLAY DIM -- Except when approaching and moving over a public crossing at grade, the headlight must be displayed in dim position:

(1) When standing on main track in yards or moving on yard tracks where other engines are employed;

Seaboard System Railroad Safety Rules for Transportation Department

ON OR ABOUT AND CROSSING TRACKS

NOTE: The term "track" as used in this section means the space between the rails (gauge) and within three feet outside the rails.

126. Except in direct line of duty, employees are prohibited from being on railroad tracks. When required to be on or about tracks, employees must be alert, watchful and keep out of danger, exercising care to avoid injury to themselves and to others. They must cultivate the good habit of remaining off and clear of the track structure at all times unless required to be there in the performance of their work. Employees must always look in both directions before stepping on or getting close to any track, even when it is known that there is no movement on the track.

127. Employees must expect the movement of trains, engines, or cars at any time, on any track, in either direction. They must not rely upon others to warn them of the approach of moving equipment, but instead, must be alert for their own safety.

REPORT: 32

RAILROAD: Baltimore & Ohio Chicago Terminal Railroad Company

LOCATION: Rockdale, Illinois

DATE: October 11, 1984, 2:15 p.m.

CAUSE: A conductor failed to wait until train slack became adjusted.

EMPLOYEE:

Occupation.	Conductor
Age	58 years
Length of Service	4 years
Last Rules Training	May 19, 1984
Last Safety Training.	October 3, 1984
Last Physical Examination	October 13, 1984

Circumstances Prior to the Accident

The accident occurred on an industrial track while a conductor was coupling air brake hoses between two loaded tank cars. Both cars were equipped with Type F interlocking couplers.

Although the conductor had only been with the Baltimore and Ohio Chicago Terminal 4 years, he previously had worked for 33 years for the Chicago, Rock Island, and Pacific Railroad.

The crew, consisting of an engineer, a conductor and 2 brakemen, was in the process of coupling the cars on the tank farm track. The conductor was directing the coupling at a private road crossing and was going to couple the air hoses after the cars were coupled. The conductor was controlling the movement with hand signals that were relayed by a brakeman approximately 8 carlengths distant.

The Accident

After the coupling was accomplished, the conductor entered between two cars to couple the air hoses. The brakeman saw the conductor's leg sticking out from under the cars for several minutes, and when the conductor did not move, the brakeman went to investigate. He found the conductor with his head caught between the coupler and the angle cock. The conductor was dead on arrival at a local hospital.

Post-accident Investigation

While reaching for the air brake hose on the other side of the couplers, the conductor placed his head near the rear of the Type F interlocking coupler. There was a slack adjustment, caused perhaps by the movement of fluid in the two loaded tank cars, the conductor's head became pinned between the rear of the coupler and the air brake angle cock.

Post-accident inspection of the two freight cars revealed no defects that would have contributed to the cause of the accident.

Applicable Rules

Chessie System Safety Rules

. . . . . .

124: Before going between standing engines or cars to couple, uncouple, or make adjustments, observe the following:

(b) Wait until slack has adjusted, paying particular attention to cushion underframe cars.

REPORT: 33

RAILROAD: Consolidated Rail Corporation

LOCATION: Harrisburg, Pennsylvania

DATE: October 11, 1984, 7:12 a.m.

CAUSE: A machine operator failed to maintain a safe distance from an 11,000-volt energized catenary wire.

EMPLOYEE:	Occupation.	Machine operator
	Age	20 years
	Length of Service	3 months
	Last Rules Training	No record
	Last Safety Training.	No record
	Last Physical Examination	No record

Circumstances Prior to the Accident

On October 10, 1984, the day before the accident, a shoulder ballast cleaner machine was used on a job near Rockville, PA. After work that day, the machine was tied down on the No. 24 Spur Track, in Amtrak's Harrisburg Passenger Terminal, for routine maintenance. The machine arrived at the No. 24 spur track at 6:15 p.m., and the maintenance was performed until about 9 p.m.

A three-man crew assigned to the shoulder ballast cleaner began work at 7 a.m., October 11. The crew was employed by Loram Maintenance of Way, Inc. under contract to Conrail to operate the machine.

The machine operator was instructed by the Loram Superintendent to tie down the cables on the loader swing.

The machine operator and two other employees of Loram Maintenance of Way, Inc., had been cautioned about the dangers of the catenary wire on September 7, September 27, and October 6, 1984. The overhead catenary wire carries 11,000 to 12,500 volts used to furnish the power to trains operating on that track.

The Accident

At 7:12 a.m., the Loram Superintendent and another machine operator heard a loud noise. The machine operator immediately shut down the machine, thinking it had malfunctioned. He got off the cleaner and walked to the right side, where he observed the first machine operator lying on the ground with his clothes burning.

The machine operator was taken to Harrisburg Hospital where he was treated for burns, an inhalation injury, and cardiac arrest. He died October 19, 1984.

Post-accident Investigation

The crew had not received any formal training on the Safety Rules for Maintenance of Way Employees, nor were they given a copy of the rules.1/

The machine operator had been on duty 12 minutes and was performing his assigned duties when the accident occurred. He had fastened the gantry cable on the right side of the load conveyer, but had not fastened the cable on the left side of the machine.

It appeared the employee chose to climb over the load conveyer to get to the left side instead of going under the conveyer or climbing off the machine and walking around it. Although there were no witnesses to the accident, the burn marks on the employee's body indicated that the catenary wire touched the left side of his neck and shoulder. The current traveled through his body and into a frame crossmember of the conveyor, as evidenced by arc marks on the frame.

Applicable Rules

Conrail Safety Rules
Maintenance-of-Way Employees

WORKING ON OR ABOUT
ELECTRICAL APPARATUS

3715. Work on or about electrical circuit, apparatus or equipment only if qualified, if sure of full knowledge as to its operating voltage and service handled, and then only when authorized to do so.

. . . . . .

1/ The employees of a contractor are expected to conform to the safety rules of the respective department in which their work is being performed. However, in this instance there was no formal training given to the employees of Loram Maintenance of Way, Inc., on the Harrisburg Division of Conrail, nor were they issued any copies of the Safety Rules for Maintenance of Way Employees.

3720. Unless otherwise authorized by Supervisor C&S [Communications & Signals] or E.T. [Electric Traction] as to safety equipment and precautions to use, keep self and any item being handled 8 or more feet from dangling wire or any foreign object that may be hanging from or may be in contact with electric circuit, apparatus or equipment and:

(a) See that object is protected until employee responsible for its correction takes charge.

(b) Keep Supervisor C&S or E.T. informed as to condition.

REPORT: 34

RAILROAD: Consolidated Rail Corporation

LOCATION: Rockville, Pennsylvania

DATE: October 28, 1984, 5:42 p.m.

CAUSE: A mechanic failed to keep clear of a suspended load of timber during the hoisting operation.

A contributing factor was the failure of the supervisor directing the operation to assure that the employee kept clear of the suspended load.

EMPLOYEE:		
	Occupation.	Mechanic
	Age	45 years
	Length of Service	8 years
	Last Rules Training	No record
	Last Safety Training.	No record
	Last Physical Examination	No record

Circumstances Prior to the Accident

The accident occurred on a stone arch bridge at milepost 110.3, on the Pittsburgh line of the Harrisburg Division. The mechanic belonged to a Buildings and Bridges (B&B) work crew that was putting 14-foot timbers in an excavation for a retaining wall. The weather was 80° F, and a thunderstorm had just passed through the area.

During the brief thunderstorm, the B&B crew sought shelter in the vehicles at the work site. After the storm passed, they began working again. At about 5:42 p.m. the mechanic was in the excavation with another employee, guiding a 14-foot timber into position between two "H" beams to form a retaining wall at the end of Track No. 4. The 14-foot timber was held up by means of a boom truck, winch cable, and a nylon choker sling, with the B&B supervisor giving signals to the boom truck operator. As the timber was raised and swung toward the excavation, the B&B supervisor noticed one of the employees was not wearing his hard hat. The supervisor gave the operator of the boom truck a hold signal and proceeded to get the employee's hard hat from one of the vehicles.

The Accident

At the time the hold signal was given, the timber was suspended directly over the excavation, controlled only by the nylon choker

sling. The timber was stationary for a short time, then its east end tipped downward, and the entire timber slipped through the nylon choker sling. The timber fell, struck the mechanic on the head, back, left shoulder, and knocked him into the stone wall on the north side of the excavation. The mechanic was facing away from the suspended timber at the time of the accident. The county coroner determined that the cause of death was shock, due to hemorrhage resulting from multiple internal injuries.

Post-accident Investigation

The B&B crew had been placing 14-foot timbers in between two "H" beams, set vertically in the excavation to form a retaining wall. Six other timbers had been placed in position before the thunderstorm, when the weather was hot and dry. The timber being handled at the time of the accident, however, was wet and slippery because of the rain water.

The employee had his back toward the timber and never saw it fall; therefore, he made no attempt to avoid it.

Had the employees been clear of the suspended load, as required by carrier safety rules, there would have been no injury from the falling timber.

Applicable Rules

Conrail Safety Rules
Maintenance-of-Way Employees

21. Keep clear of hoisting equipment boom or suspended load on hoisting equipment. Stand in the clear while a pull or hoist is made with cable, chain or other tackle.

RESPONSIBILITIES OF EMPLOYEE

. . . . . .

3001. Immediate supervisor shall:

(a) Be responsible for the safety instruction and safe performance of all men under his jurisdiction, including employees from another department or gang.

(b) Inform such employees as to unusual hazards before starting the work.

(c) Personally and continuously supervise work involving unusual hazards.

(d) Promptly advise his immediate supervisor of any employee who resists correction and/or does not improve his unsafe practices.

. . . . . .

3004. When it can be avoided employees must not rely on the watchfulness of others. They must protect their own safety.

3409. Place block or hook directly over the centered on load, if possible, so that the lift will be vertical to prevent load from dragging, swinging or catching other object.

Use tag line and/or hand lines as may be necessary to assist in controlling load, see that all persons are in a safe position, hoist slowly until load is vertical and under complete control, if any of the following or other hazards exists:

(a) Position of hoisting equipment, object to be moved or other object, necessitates lifting at an angle.

(b) The object being handled, or the men assisting are in confined space.

(c) The shape or the size of the load is unusual.

REPORT: 35

RAILROAD: Baltimore and Ohio Railroad Company

LOCATION: Martinsburg, West Virginia

DATE: October 31, 1984, 6:48 p.m.

CAUSE: A fireman failed to remain clear of rolling equipment.

EMPLOYEE:

Occupation	Fireman
Age	28 years
Length of Service	5 years
Last Rules Training	May 31, 1984
Last Safety Training	May 31, 1984
Last Physical Examination	September 14, 1982

Circumstances Prior to the Accident

The terrain in Pearson Yard, in the accident area, is level with five tangent parallel tracks extending east and west. From the north to the south, these tracks are called the Westbound Siding, No. 1 Main, No. 2 Main, Eastbound Siding, and the Scale Siding. The temperature was 60° F with dark cloudy skies.

On the day of the accident, the fireman (also a qualified engineer) was a member of a yard crew that also included an engineer, a conductor, and two brakemen. The crew went on duty at 4 p.m. at Martinsburg after having been off duty for 16 hours.

After Amtrak's westbound passenger train No. 701, consisting of a locomotive (ATK 260) and five coaches, terminated in Martinsburg, the fireman, the yard conductor, and one of the two yard brakemen moved the train westward from the Amtrak station to the Scale Siding Track. The employees stopped the train on the Scale Siding Track when the locomotive was at milepost 99 pole 52.

The yard conductor and the brakeman who rode on the last coach applied the coach handbrakes and lined the switches. The fireman applied the handbrake on the locomotive, and then descended from the locomotive, using the ladder steps on the right-rear (north) side. The fireman had intended to board the crew's yard engine on the Westbound Siding. The yard engineer and the second brakeman were on the yard engine.

Walking in a northeasterly direction, the fireman crossed the eastbound siding and approached the No. 2 Main Track at a point about 23 feet from the Amtrak locomotive.

The Accident

A consist of two locomotives was moving eastward at 15 mph on the No. 2 Main Track. Apparently the fireman became caught on the rerailer hanger hook, located about 4 feet from the rear pedistal binder bolt, on the trailing truck on the trailing locomotive and was dragged about 39 feet to the east-end crossover switch on No. 2 Main Track.

The yard engineer and the brakeman had expected the fireman to return immediately to the yard engine, and when she did not, the brakeman started looking for her. He found her lying unconscious at the east-end crossover switch. She was taken by ambulance to a hospital in Martinsburg and then by medical helicopter to the University Hospital Shock Trauma Unit in Baltimore, MD. She was pronounced dead at 11 p.m.

Post-accident Investigation

As there were no witnesses to the accident, the exact circumstances could not be determined. However, an investigation indicated that Amtrak Locomotive No. 260 was standing on the Scale Siding Track with the headlight displaying "bright" and with the diesel engine in fast idle. The locomotive consist was moving on Track No. 2 with the engines in idle, preparing to stop at "NA Tower" in Martinsburg. On the basis of simulated tests conducted at the scene, it appears that the engine noise generated by ATK No. 260 made it virtually impossible for the fireman to hear the locomotive consist moving on Track No. 2. And because of the bright headlight displayed by ATK No. 260, the crew of the locomotive consist could not see anyone standing near Track No. 2.

The crew was unaware of the accident until they were instructed to stop. An inspection of the locomotives indicated that the rerailer hanger hook on the trailing truck of the trailing locomotive was scuffed, and a small trace of hair was found on the rear pedestal binding bolt of the L2 wheel. An autopsy was performed, and the cause of death was listed as multiple injuries.

Applicable Rules

Chessie System Railroads
Operating Rules.

HEADLIGHT

17. The headlight must be displayed "Bright" on the leading end of every train by day and by night. It must be displayed "Dim" by night, ...

(a) While standing or passing through yards where yard engines are working;

. . . . . .

2044. Employees on or about tracks must always be alert to keep out of danger, exercising care to avoid injury to themselves and others . . . .

2045. Expect movement of equipment on any track, at any time, in either direction. Always look in both directions before crossing or getting close to any track. . . .

. . . . . .

REPORT: 36

RAILROAD: Missouri Pacific Railroad Company (MP)

LOCATION: Dolton, Illinois

DATE: November 3, 1984, 3:10 p.m.

CAUSE: A carman apparently lost his grip or footing while attempting to cross between a moving cut of cars.

EMPLOYEE:

Occupation.	Carman
Age	45 years
Length of Service	14 years 8 months
Last Rules Training	No record
Last Safety Training.	No record
Last Physical Examination	November 1983

Circumstances Prior to the Accident

At 3 p.m., a carman reported for duty at South Tower, the MP operations center for the yardmaster and the car department personnel in Dolton. The four tracks along the west side of the Tower are from east to west: a switching lead, Track 240, a northbound main, and a southbound main. A service road approximately 30 feet south of the Tower crosses the four tracks at a 90-degree angle. The crossing is practically level.

The carman was assigned to hand an "Igloo" water cooler and two air hoses to the crew of Freight Train CFZ. After picking up the water cooler and air hoses, the carman went to the road crossing and stood on the east side of the southbound main to await Train CFZ.

Moving southward, Train CFZ arrived on the southbound main, and the carman gave the water cooler to a member of the head-end crew. When the train continued moving southward, the carman remained at the crossing so that he could hand the air hoses to a member of the rear-end crew.

At about this time, a yard switching crew was pulling a cut of 47 cars southward out of the yard and onto the switching lead.

When the switching locomotive passed over the crossing, the engineer waved to the carman, which the carman acknowledged while still on the crossing facing eastward. The cars on the switching lead were now between the carman and the South Tower.

The Accident

When Train CFZ stopped (after moving a short distance beyond the crossing in order to close a trailer door), the engineer of the train noticed the carman walking away from his train and towards the slowly moving cars on the switching lead. The trailer door was closed, and Train CFZ began moving southward again. As the caboose of Train CFZ moved over the crossing, the rear brakeman saw a body lying beside the moving cars on the switching lead south of the crossing. The carman had been run over, and died instantly of multiple injuries.

Post-accident Investigation

Since there were no witnesses to the accident, it could not be determined why the carman left his position near the departing Train CFZ and was attempting to cross between the 17th and 18th cars of the switching movement.

A gondola (MP 641259) equipped with an end platform was the 17th car from the locomotive. An examination of the car by the Federal Railroad Administration and carrier personnel disclosed no defects that could have contributed to the accident.

Applicable Rules

Uniform Code of Safety Rules

GETTING ON OR OFF ENGINES, CARS OR OTHER EQUIPMENT

120. Employees are prohibited from getting on or off moving engines, cars or other equipment except when necessary in the proper performance of their duties....

REPORT: 37

RAILROAD: Texas, Oklahoma and Eastern Railroad Company

LOCATION: Valliant, Oklahoma

DATE: November 15, 1984, 12 noon

CAUSE: An employee was pinned between two cars.

Failure of the carrier to provide blue-flag protection was a contributing factor.

EMPLOYEE:		
	Occupation.	Oiler
	Age	32 years
	Length of Service	10 years
	Last Rules Training	No record
	Last Safety Training.	July 26, 1984
	Last Physical Examination	June 4, 1974

Circumstances Prior to the Accident

In the accident area at the Weyerhaeuser Company chip yard, there are two rollover (dumping) tracks that extend to a return track. Weyerhaeuser chip yard crews shove the loaded chip-wood cars on the rollover track to the rotary where they are dumped. The crews uncouple each car and close the knuckles, then the car is rolled over and dumped. When returned to the upright position, each car is hit by the closed knuckle of the next car to be dumped. The empty chip car moves down an inclined track, then up the inclined track through the spring switch on the return track. The car stops, and subsequently rolls back past the spring switch into the Weyerhaeuser New Lower Yard. That yard consists of four tracks, Nos. 19, 20, 21, and 22, extending east to west geographically. The unloading process is accomplished at a rate of one car every 5 to 7 minutes.

At the time of the accident, a chip yard oiler had the New Lower Yard Track lined for track No. 20, and when a car would roll into Track No. 20 and stop, the oiler would open the knuckles and align the drawbars on both ends of the car. If the car had friction bearing wheels, he would oil each journal, and wait by the side of the track for the next car to come down. When the following car made a coupling and rolled to a stop, the oiler would couple the air hoses, check the center plates and the side-bearing clearance and, if necessary, he would repair the uncoupling lever. On this day, the oiler had performed these tasks on five cars on Track No. 20.

The Accident

TO&E 898 was the sixth car in Track No. 20. The oiler had oiled the L-1, 2, 3, and 4 journal bearing boxes, leaving two journal box lids open on the north side of the car. The R-1, 2, 3, and 4 journal bearing boxes were not oiled.

He had just opened the knuckle on the west, or "B", end and was either adjusting the "B" end drawbar or walking across the track when the drawbar on TO&E 1532 struck and pinned the oiler against the drawbar of TO&E 898. The cars separated, and the body of the man dropped between the rails of Track No. 20.

Other cars came down into the track, and TO&E 1532 and TO&E 1574 passed over the body. Then the brake rigging on the west end of TO&E 854 caught the oiler's clothing and dragged him 29 feet from the point of impact.

Eighteen more cars were put on track No. 20. TO&E 898 had been moved 207 feet from the point of impact before the body was found at 1:35 p.m. The man's oil can and box-lid hook were found on the south side of Track No. 20, 6 feet west of the point of impact. His hat and radio were found between the rails of Track No. 20 at the point of impact. The oiler was pronounced dead at the scene.

Post-accident Investigation

The working procedure for the chip yard oiler was unsafe; a violation of Part 218 of the Code of Federal Regulations existed because he was required to work on or between cars without blue flag protection. The duties of the employee required him to move to either side of the track and perform work on standing cars while other cars were permitted to roll down the track and strike these standing cars.

Applicable Rules

Title 49; Code of Federal Regulations.

Part 218 - Railroad Operaating Rules

Subpart B - Blue Signal Protection of Workmen

Section 218.23 Blue Signal Display.

. . . . . .

(b) Blue Signals must be displayed in accordance with Section 218.25, 218.27, or 218.29 by each craft or group of workmen prior to their going on, under, or between rolling

equipment and may only be removed by the same craft or group that displayed them.

. . . . . .

Section 218.27 Workmen on track other than main track.

When workmen are on, under, or between rolling equipment on track other than main track -

(a) A blue signal must be displayed at or near each manually operated switch providing access to that track;

(b) Each manually operated switch providing access to the track on which the equipment is located must be lined and locked with an effective locking device; ....

REPORT: 38

RAILROAD: Consolidated Rail Corporation

LOCATION: Alpha, New Jersey

DATE: November 14, 1984, 3:30 a.m.

CAUSE: Suicide of an off-duty trackman

EMPLOYEE:

Occupation	Trackman
Age	54 years
Length of Service	11 years
Last Rules Training	No record
Last Safety Training	September 25, 1984
Last Physical Examination	January 26, 1984

Circumstances Prior to the Accident

In the accident area on the Lehigh Line at milepost 73.9, a single main track is on a 3-degree curve and in a rock cut about 30 feet wide and 20 feet high. Maximum authorized speed for freight trains in the area is 50 mph. A dirt road owned by Conrail closely parallels the main track on the north side.

The off-duty trackman worked in the Allentown, PA, yard on the day before the accident until 3:30 p.m. His home was within 2 miles of the accident site.

The Accident

The last westbound train had passed the accident site at 3:30 a.m.

At 5:20 a.m., on the day of the accident, the engineer of an eastbound freight train reported sighting a body lying along the south side of the single main track at Milepost 73.9.

The crew members of the westbound train were interviewed, but none reported seeing anyone near the track in the vicinity of the accident site.

Post-accident Investigation

A post-accident examination of the body revealed that the victim had been struck and decapitated by a westbound train.

The assistant county medical examiner ruled the death a suicide. Toxicological tests showed a blood alcohol content of 0.10 percent and serum diazepam (valium) at a level of 0.1 MCG/ML; however, the assistant county medical examiner did not consider the levels high enough to be certainly related to the death. FRA's investigation revealed no work-related reasons for the suicide.

Applicable Rules

None.

REPORT: 39

RAILROAD: Illinois Central Gulf Railroad

LOCATION: Herrin, Illinois

DATE: November 26, 1984, 12:30 p.m.

CAUSE: Use of incompatible equipment components.

EMPLOYEE:

Occupation.	Welder
Age	56 years
Length of Service	37 years
Last Rules Training	February 9, 1984
Last Safety Training.	No record
Last Physical Examination	November 10, 1983

Circumstances Prior to the Accident

In Herrin, IL, where South Park Avenue crosses the railroad track, the terrain is level.

The welder and two signal maintainers were sent to Herrin, IL, with a 2 1/2-ton truck (equipped with a hydraulic boom on the rear) to repair a cantilever-type highway-railroad crossing protection signal over South Park Avenue. The signal is on the south side of the railroad tracks and on the east side of the street.

Because of heavy automobile traffic under the signal, the boom truck was positioned northeast of the signal so as not to impede the flow of traffic.

An aerial basket was attached to the north side of the boom by inserting the basket's horizontal pivot shaft into a sleeve on the extreme end of the boom. There was nothing else to secure the shaft to the boom or to otherwise prevent the shaft of the aerial bucket from falling off the sleeve on the boom.

One of the signal maintainers got into the basket, the other operated the hydraulic controls at the rear of the truck, raising the basket to the desired height. The second maintainer then swung the basket to the north, stopping clear of the signal mast. After the first maintainer examined the area to be welded, the basket was lowered to the ground in a reverse movement and the maintainer got out.

The Accident

The welder went into the basket, facing north, his back toward the boom. With the same maintainer operating the controls, the aerial basket was raised to the desired height. Then, as the maintainer pulled out the boom swing activating rod, the boom jerked and started moving northward with excessive speed. The maintainer immediately released the swing activating rod, and the boom quickly stopped. However, the momentum carried the welder in the aerial basket onward in the direction of the swing and dislodged the aerial basket from the boom. The basket carrying the welder fell 9 feet, stuck a wooden guard rail, and pivoted toward the street. The welder's head and upper body hit the street pavement. He suffered a skull fracture and died about 15 hours later.

Post-accident Investigation

The basket was attached to the north side of the boom in the direction of the swing, and the signal maintainer had just used the basket with no problems. When the welder used the basket, the boom started northward with a jerk and moved with excessive speed. The boom stopped quickly, and the aerial basket fell off from the boom. The basket's horizontal shaft and the sleeve on the boom were compatible, but the shaft did not extend beyond the sleeve for a fastener or a retaining pin. The basket was not designed for use with this particular boom assembly and did not have safety belts.

The manufacturer "National Crane Corporation" recommended the use of safety belts attached to loops of the boom.

Applicable Rules

None.

REPORT: 40

RAILROAD: Burlington Northern

LOCATION: Livingston, Montana

DATE: November 30, 1984, 8:15 p.m.

CAUSE: An employee failed to remain clear of moving equipment in an area of close clearance.

EMPLOYEE:		
	Occupation.	Laborer
	Age	27 years
	Length of Service	7 years
	Last Rules Training	September 19, 1984
	Last Safety Training.	September 19, 1984
	Last Physical Examination	No record

Circumstances Prior to the Accident

A laborer, who went on duty at 3:30 p.m. on the day of the accident, was helping a shop locomotive operator to move a a locomotive from a paint stripping stall to a transfer table. At some locations on the locomotive, the space between it and the building measures as little as 7 inches. The operator said that when he had coupled the shop locomotive to the locomotive to be moved, he saw the laborer standing inside the building near the doorway.

The Accident

After the laborer gave a proceed signal, the operator turned and faced forward to operate the controls. As the locomotive moved onto the transfer table, the operator looked back and saw the laborer fall to the ground outside the building. He had been caught and crushed in the space between the locomotive and the brick frame of the doorway. The severely injured laborer was taken to Livingston Memorial Hospital, where he died at 11:52 p.m.

Post-accident Investigation

There were no witnesses to the accident, and it could not be determined why the laborer put himself in such a position without adequate clearance.

Applicable Rules

Burlington Northern Railroad Safety Rules and General Rules

567. Employees must:

a. Not incur risk which can be avoided by exercise of care and judgment.

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